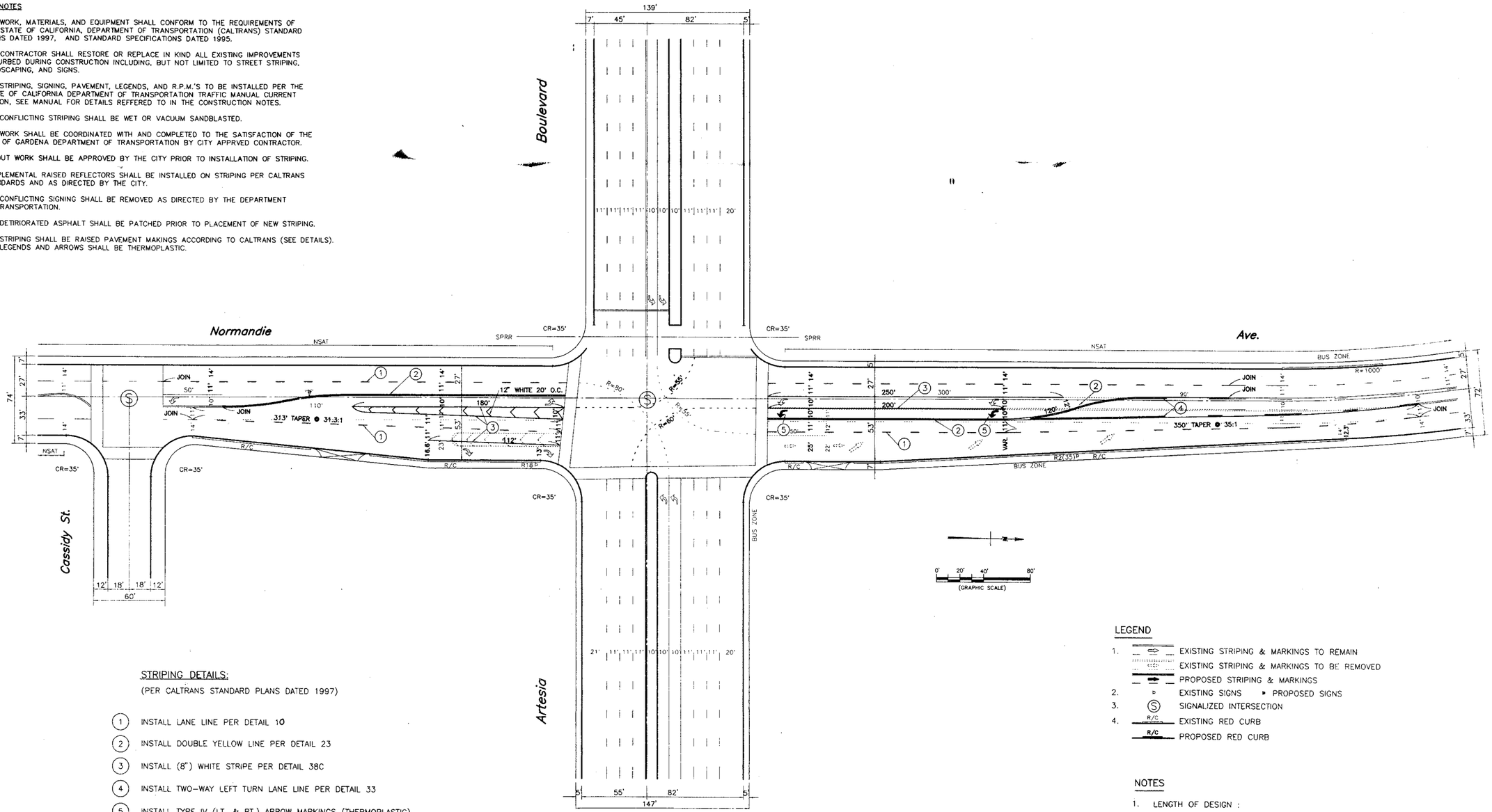
GENERAL NOTES

1. ALL WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS DATED 1997, AND STANDARD SPECIFICATIONS DATED 1995.
2. THE CONTRACTOR SHALL RESTORE OR REPLACE IN KIND ALL EXISTING IMPROVEMENTS DISTURBED DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO STREET STRIPING, LANDSCAPING, AND SIGNS.
3. ALL STRIPING, SIGNING, PAVEMENT, LEGENDS, AND R.P.M.'S TO BE INSTALLED PER THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION TRAFFIC MANUAL CURRENT EDITION, SEE MANUAL FOR DETAILS REFFERED TO IN THE CONSTRUCTION NOTES.
4. ALL CONFLICTING STRIPING SHALL BE WET OR VACUUM SANDBLASTED.
5. ALL WORK SHALL BE COORDINATED WITH AND COMPLETED TO THE SATISFACTION OF THE CITY OF GARDENA DEPARTMENT OF TRANSPORTATION BY CITY APPRVED CONTRACTOR.
6. LAYOUT WORK SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLATION OF STRIPING.
7. SUPPLEMENTAL RAISED REFLECTORS SHALL BE INSTALLED ON STRIPING PER CALTRANS STANDARDS AND AS DIRECTED BY THE CITY.
8. ALL CONFLICTING SIGNING SHALL BE REMOVED AS DIRECTED BY THE DEPARTMENT OF TRANSPORTATION.
9. ALL DETIRIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF NEW STRIPING.
10. ALL STRIPING SHALL BE RAISED PAVEMENT MAKINGS ACCORDING TO CALTRANS (SEE DETAILS). ALL LEGENDS AND ARROWS SHALL BE THERMOPLASTIC.



STRIPING DETAILS:

(PER CALTRANS STANDARD PLANS DATED 1997)

(1) INSTALL LANE LINE PER DETAIL 10
(2) INSTALL DOUBLE YELLOW LINE PER DETAIL 23
(3) INSTALL (8") WHITE STRIPE PER DETAIL 38C
(4) INSTALL TWO-WAY LEFT TURN LANE LINE PER DETAIL 33
(5) INSTALL TYPE IV (LT. & RT.) ARROW MARKINGS (THERMOPLASTIC)

LEGEND

1. EXISTING STRIPING & MARKINGS TO REMAIN
   EXISTING STRIPING & MARKINGS TO BE REMOVED
   PROPOSED STRIPING & MARKINGS
2. EXISTING SIGNS ▸ PROPOSED SIGNS
3. (S) SIGNALIZED INTERSECTION
4. R/C EXISTING RED CURB
   R/C PROPOSED RED CURB

NOTES

1. LENGTH OF DESIGN :
   NORMANDIE AVE. ± 1,095'
2. PAINT REMOVAL REQUIRED.

JAN 25 2000
OFFICE OF PERMITS

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

PLAN PREPARED BY:
REGISTERED TRAFFIC ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER VLADO J. VLAHOVIC NO. 1168 Exp. 12-31-98 TRAFFIC STATE OF CALIFORNIA

PLAN RECOMMENDED BY:
REGISTERED CIVIL ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER GEORGE RHYNER NO. 047763 Exp. 12-31-99 CIVIL STATE OF CALIFORNIA

NO.	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT ENGINEERING DIVISION
PROJECT: HARBOR GATEWAY
LIMITS: NORMANDIE AVE. FROM 440' S/O TO 655' N/O ARTESIA BLVD.

F.B. REF. | DATE | APPROVED BY: 1/21, 19 99
DESIGNED BY
DRAWN BY
CHECKED BY
CITY ENGINEER R.C.E. NO. 17827
SHT.__OF__ | DWG. NO.

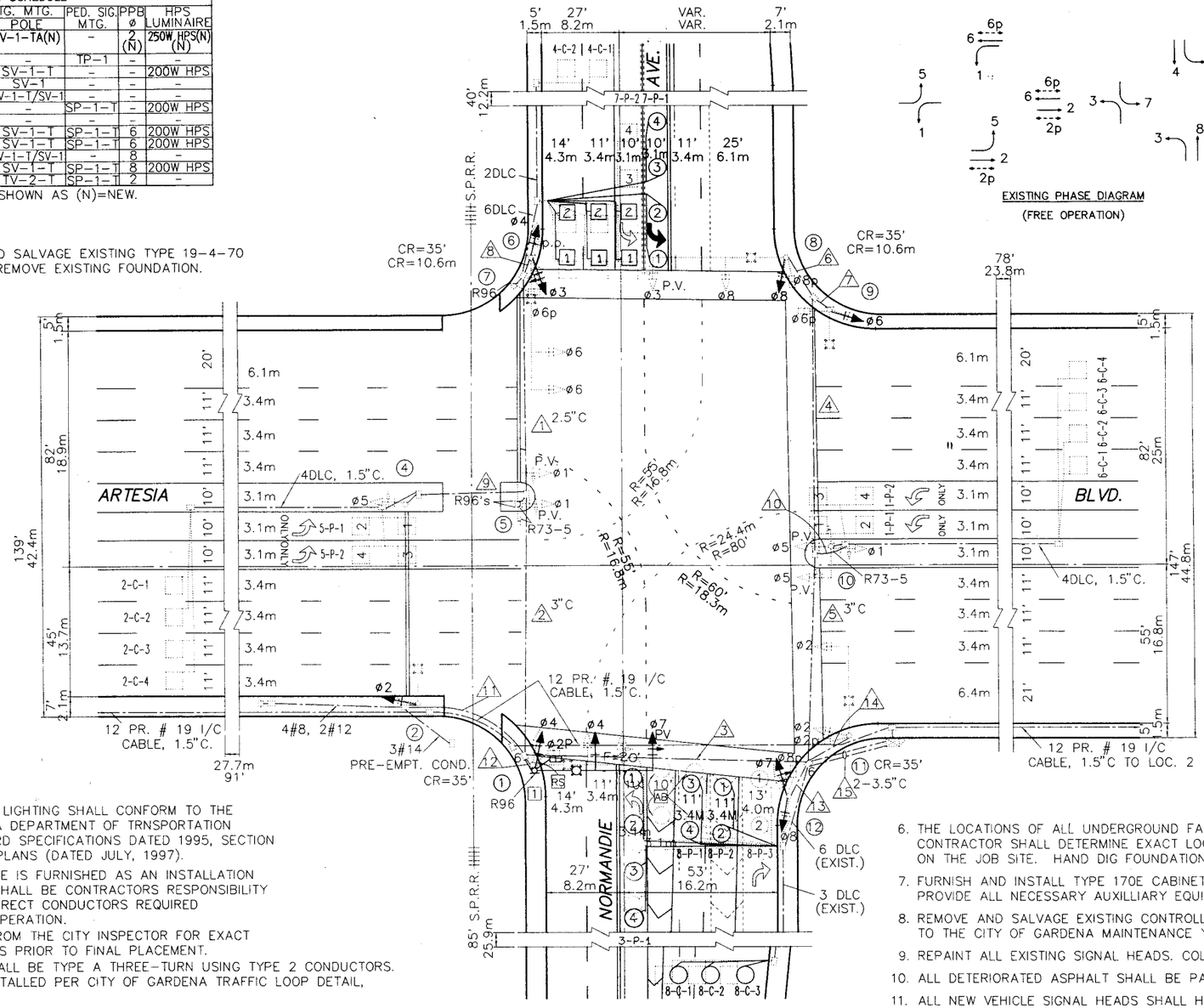
BOE-C6-0089969

POLE AND EQUIPMENT SCHEDULE								
No.	STANDARD TYPE	SIG. M.A.	LUM. M.A.	VEH. SIG. MTG. MAST	VEH. SIG. MTG. POLE	PED. SIG. MTG.	PPB ø	HPS LUMINAIRE
①	26-3-70 (N)	40' (N)	12' (N)	MAS(N) MAS(N)	SV-1-TA(N)	-	2 (N)	250W HPS(N) (N)
②	1A-10	-	-	-	-	TP-1	-	-
③	15	-	12'	-	SV-1-T	-	-	200W HPS
④	1A-10	-	-	-	SV-1	-	-	-
⑤	33	10'	-	MAS	SV-1-T/SV-1	-	-	-
⑥	26-4-70	45'	12'	MAS	-	SP-1-T	-	200W HPS
⑦	1A-7	-	-	-	-	-	-	-
⑧	26-4-70	45'	12'	MAS	SV-1-T	SP-1-T	6	200W HPS
⑨	15	-	12'	-	SV-1-T	SP-1-T	6	200W HPS
⑩	33	10'	-	MAS	SV-1-T/SV-1	-	8	-
⑪	17-2-70	30'	12'	MAS	SV-1-T	SP-1-T	8	200W HPS
⑫	1A-10	-	-	-	TV-2-T	SP-1-T	2	-

ALL EQUIPMENT IS EXISTING UNLESS SHOWN AS (N)=NEW.

NOTES:

1 AT LOCATION ① REMOVE AND SALVAGE EXISTING TYPE 19-4-70 POLE AND ASSEMBLY AND REMOVE EXISTING FOUNDATION.



CONDUCTOR SCHEDULE															
SIZE No.	CABLE / WIRE	RUN 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
M U L T I	3 CONDUCTOR CABLE (N) 3 X #14						1	1	1		1		1	1	1	
	5 CONDUCTOR CABLE (N) 5 X #14						4	2	4	1	3	1	4	3	3	
	28 CONDUCTOR CABLE (N) 27 X #14 & 1 X #10 (COM)	1	2	3	1	2										5
6	SERVICE (E)			2												2
DLC	LOOP CABLE (N)	1	1	1												1
DLC	LOOP CABLE (E)	5	11	11		6										23
12 Pr #19	INTERCONNECT (E)															
10	LUMINAIRE (E)	2	2	2	2	2	2	2	2			2	2	2	2	
12	SIGN LIGHTING (E)	2	2	2	2	2	2	2	2			2	2	2	2	
3 #20	EMER. VEH. DET. CABLE (E)			1												2
	CONDUIT SIZE	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.

REMOVE ALL CONDUCTORS FROM CONDUIT RUN 1-14. REPULL CONDUCTORS AND CABLES SHOWN AS EXISTING (E). AND INSTALL NEW (N) CONDUCTORS.
CLEAN EXISTING CONDUITS AFTER REMOVAL OF EXISTING CONDUCTORS.

GENERAL NOTES:

1. TRAFFIC SIGNAL AND LIGHTING SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF TRNSPORTATION (CALTRANS) STANDARD SPECIFICATIONS DATED 1995, SECTION 86, AND STANDARD PLANS (DATED JULY, 1997).
2. CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE CONTRACTORS RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
3. OBTAIN APPROVAL FROM THE CITY INSPECTOR FOR EXACT EQUIPMENT LOCATIONS PRIOR TO FINAL PLACEMENT.
4. LOOP DETECTORS SHALL BE TYPE A THREE-TURN USING TYPE 2 CONDUCTORS. LOOPS SHALL BE INSTALLED PER CITY OF GARDENA TRAFFIC LOOP DETAIL, DWG. NO. ST-24.
5. THE LOCATIONS OF ALL UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTIONS. TELEPHONE UNDERGROUND SERVICE ALERT, AT (800) 422-4133, 48 HOURS PRIOR TO CONSTRUCTION.
6. THE LOCATIONS OF ALL UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTIONS.
7. FURNISH AND INSTALL TYPE 170E CABINET AND SIGNAL CONTROLLER. PROVIDE ALL NECESSARY AUXILLIARY EQUIPMENT FOR THE OPERATION SHOWN.
8. REMOVE AND SALVAGE EXISTING CONTROLLER AND CABINET AND DELIVER IT TO THE CITY OF GARDENA MAINTENANCE YARD.
9. REPAINT ALL EXISTING SIGNAL HEADS. COLOR TO BE APPROVED BY CITY OF GARDENA.
10. ALL DETERIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF LOOPS.
11. ALL NEW VEHICLE SIGNAL HEADS SHALL HAVE 12-INCH LENSES.

SCALE: 1": 20'

JAN 05 2000
OFFICE OF PERMITS

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

PLAN PREPARED BY:
REGISTERED TRAFFIC ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER VLADO J. VLAHOVIC NO. 1168 Exp. 12-31-98 TRAFFIC STATE OF CALIFORNIA

PLAN RECOMMENDED BY:
REGISTERED CIVIL ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER GEORGE RHYNER NO. 047763 Exp. 12-31-99 CIVIL STATE OF CALIFORNIA

NO.	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT ENGINEERING DIVISION
PROJECT: HARBOR GATEWAY
LIMITS: ARTESIA BLVD. AT NORMANDIE AVE.

F.B. REF. | DATE | APPROVED BY: 19 99
DESIGNED BY
DRAWN BY
CHECKED BY
QSP ENGINEER R.C.E. NO. 19327
SHT. OF DWG. NO.

BOE-C6-0089970

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

STANDARD ENCROACHMENT PERMIT APPLICATION

TR-0100 (REV. 11/94)

FOR CALTRANS USE
PERMIT NO.
DIST/CO./RTE/PM
SIMPLEX STAMP
DATE OF SIMPLEX STAMP

Permission is requested to encroach on the State Highway Right of Way as follows: (Complete all items: NA if not applicable)
Application is not complete until all required attachments are included.

1. LOCATION: CITY	2. COUNTY	3. ROUTE
Los Angeles	Los Angeles	SR-91

4. POST MILE	5. APPLICATION DATE	6. ADDRESS OR STREET NAME
5.5 - 6.0	12/15/99	Artesia Boulevard

7. CROSS STREET (Distance and direction from site)
Normandie Avenue and Vermont Avenue

8. PORTION OF RIGHT OF WAY
Traffic Signals

9. WORK TO BE PERFORMED BY	10. EST. START DATE	11. EST. COMPLETION DATE	12. EST. COST IN STATE R/W
☐ OWN FORCES ☒ CONTRACTOR	6/1/2000	12/31/2000	$39,000

EXCAVATION	13. MAX. DEPTH	14. AVG. DEPTH	15. AVG. WIDTH	16. LENGTH	17. SURFACE TYPE
	N/A	N/A	N/A	N/A	N/A

PIPES	18. TYPE	19. DIAMETER	20. VOLTAGE/PRESSURE	21. PRODUCT
	N/A	N/A	N/A	N/A

22. **FULLY DESCRIBE WORK WITHIN STATE R/W (additional space on reverse side if needed):** Attach complete plans (minimum 5 sets folded 21.6 centimeter X 28 centimeter (8.5" X 11")) specs, calcs, Maps, etc., if applicable.

Normandie Avenue will be restriped to provide southbound dual left-turn lanes at Artesia Boulevard (SR-91). Incidental changes to the traffic signal within the state right-of-way will be required. Similar changes to Vermont Avenue are proposed to provide dual northbound left-turn lanes. Incident signal and island modifications will be required within the State right-of-way.

YOUR OWN REFERENCE NO. _____ **Has any other Caltrans Department reviewed your plans?** ☐ Yes ☐ No

23. ***Is any work being done on applicant's property?*** ☐ YES ☒ NO (If "YES", briefly describe in Section #22, and attached site and grading plans.)

24. ***Is a city, county, or other public agency involved in the environmental approval?***
☒ YES (Check documentation type and attach approved copy) ☐ EXEMPT ☐ N.D. ☒ EIR
☐ NO (Check a category below in Section 24a., which describes the project)

24a.

☐ FLAGS, SIGNS, BANNERS, DECORATIONS, PARADES AND CELEBRATIONS
☐ CONSTRUCTION/MODIFICATION OF SIGNALS OR ANY OTHER TRAFFIC CONTROL SYSTEMS AND DEVICES, INCLUDING ADDITION OF NEW ELEMENTS
☐ CONSTRUCTION, RECONSTRUCTION, MAINTENANCE OR RESURFACING OR A DRIVEWAY OR REAL APPROACH
☐ DITCH PAVING
☐ FENCE
☐ MAILBOX
☐ PUBLIC UTILITY MODIFICATIONS, EXTENSIONS, HOOKUPS
☐ ADDITION OR REPLACEMENT OF ROADWAY DEVICES OR MARKINGS (GLARE SCREEN, BARRIERE, LIGHTING, STRIPING, MARKERS, ETC.)
☐ SIDEWALKS/GUTTERS
☐ MOVIE, TV FILMING AND SURVEY
☐ REPAIR/MAINTENANCE OF EXISTING HIGHWAYS
☐ EROSION CONTROL
☐ NONE OF THE ABOVE (if project cannot be described in the above categories, request application Part "B" from the Permit Office)

24b. **Does this project cause a substantial change in the significance of a historical resource?** ☐ YES ☒ NO (If "YES", request application Part "B" from the Permit Office)

24c. **Is the project on an existing highway or street where the activity involves removal of a scenic resource including a stand of trees, a rock outcropping or a historic building?** ☐ YES ☒ NO (If "YES", request application Part "B" from the Permit Office)

The undersigned agrees and understands that a permit can be denied or a bond required for non-payment of prior or present permit fees, that the work will be done in accordance with Caltrans rules and regulations subject to inspection and approval, and that permit fees may still be due when an application is withdrawn or denied.

25. ORGANIZATION OR APPLICANT NAME (Print or Type)	26. BUSINESS PHONE
Boeing Realty Corporation	(562) 627-3014
27. ARCHITECT, ENGINEER OR PROJECT MANAGER NAME (Print or Type)	28. BUSINESS PHONE
George Rhyner, Crain & Associates	(310) 473-6508

29. APPLICANTS ADDRESS (Include City and Zip Code)
4060 Lakewood Boulevard, Sixth Floor, Long Beach, CA 90808-1700

30. AUTHORIZED SIGNATURE	31. PRINT OR TYPE NAME	32. TITLE	33. DATE
	Mario Stavale	Project Manager	

EP 94 0009

22. Description of work (continued)

FEE CALCULATION - FOR CALTRANS USE

☐ CASH/CHECK ☐ CREDIT CARD ☐ EXEMPT ☐ PROJECT EA _____
☐ SET FEE ☐ AS ☐ AX ☐ DEFERRED BILLING (Utility)

CALCULATED BY	(1)		(2)		
REVIEW 1. _____ HOURS @ $_____ * 2. _____ HOURS @ $_____ *	1. FEE/DEPOSIT $_____	DATE	2. FEE/DEPOSIT $_____	DATE	TOTAL FEE/DEPOSIT $_____ $_____
INSPECTION 1. _____ HOURS @ $_____ * 2. _____ HOURS @ $_____ *	$_____		$_____		$_____ $_____
FIELD WORK _____ HOURS @ $_____ *	$_____		$_____		$_____
CASH DEPOSIT IN LIEU OF BOND	$_____		$_____		$_____
TOTAL COLLECTED **CASHIER'S INITIALS**	$_____ $_____		$_____ $_____		$_____

* The current hourly rate is set annually by Headquarters Accounting. District Office staff do not have authority to modify this rate.

PERFORMANCE BOND ☐	DATE	AMOUNT $ _____
PAYMENT BOND ☐	DATE	AMOUNT $ _____
LIABILITY INSURANCE REQUIRED? **Yes** ☐ **No** ☐		AMOUNT $ _____

EP 94 0009

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PERMIT ENGINEERING EVALUATION REPORT

TR-0112 (REV. 8/94)

HOURS FOR PREPARING:	PERMIT NO.:
DATE: 12/15/99	DIST/CO/RTE/PM: 07/LA/91/5.51
EA USED: Harbor Gateway Center	APPLICANT: Boeing Realty Corporation

1. DESCRIBE PERMIT PROPOSAL, WHAT IT SERVES, APPROXIMATE COST.

Artesia Boulevard (SR-91) passes north of the 170-acre multi-use retail/industrial facility being constructed on the site of a former Boeing Aircraft manufacturing facility. As part of the Harbor Gateway Center traffic mitigation recommendations, projected traffic conditions would require southbound lanes on Normandie Avenue to be restriped for dual left turn lanes. Northbound Normandie Avenue lanes would be adjusted to match lane changes on the north side of the intersection, allowing for a smooth through traffic flow. These changes will take place to the City of Gardena facilities. No existing lane markings in the State right-of-way will be changed. The City of Gardena controls the signalization of the intersection. One existing signal pole and mast arm will be replaced on the southwest corner of Normandie Avenue. All northbound and southbound Normandie Avenue mastheads will be replaced and upgraded from eight-inch to twelve-inch lenses. Loop detectors in Normandie Avenue at Artesia Boulevard will also be replaced. The cost of improvements would be $15,765 to be born by the applicant. See Attachment A.

2. DESCRIBE EXISTING HIGHWAY - BRIEF ANALYSIS OF IMPACT ON HIGHWAY OPERATION, AND MAINTENANCE.

The Normandie Avenue and Artesia Boulevard (SR-91) intersection located in the City of Gardena. Signals at this intersection are controlled by Gardena. At the intersection, Artesia Boulevard has three through lanes, one shared through and right turn lane, and two left turn lanes. An existing center divider separates eastbound from westbound traffic. Northbound Normandie Avenue contains a dedicated right turn lane, two through lanes and one left turn lane. A painted median separates the dedicated right turn lane from the number one through lane. Southbound Normandie Avenue contains two through lanes, one shared through and right turn lane, and one dedicated left turn lane. The proposal would improve traffic operations at this intersection. These changes will have no appreciable impacts on highway maintenance which are already part of existing programs.

3. ANALYSIS OF PERMIT PROPOSAL FOR GEOMETRIC AND FUNCTIONAL ADEQUACY.

No geometric changes will take place in the State right of way. The additional southbound left turn lane on Normandie Avenue will accommodate future traffic volumes, as shown in the results of the critical movement analysis summary for the intersection of Normandie Avenue and Artesia Boulevard (see Attachment C).

3a. NON-STANDARD DESIGN FEATURES? YES ☐ NO ☒
If YES above, provide rationale, name and date of Project Development reviewer's concurrence. (on Federal Aid Projects, FHWA concurrence)

4. REVISION IN ACCESS CONTROL OR TRANSFER OR R/W TO PERMITTEE INVOLVED: YES ☐ NO ☒

4a. IF YES, DATE OF DISTRICT DIRECTOR APPROVAL

4b. IF INTERSTATE, DATE OF FHWA APPROVAL

5. SIGNALIZATION INVOLVED: ☒ YES ☐ NO

If yes, signal warrants met (see Attachment B)	☐ YES	☐ NO*	☒ NOT APPLICABLE
Capacity Analysis OK (see Attachment C)	☒ YES	☐ NO*	☐ NOT APPLICABLE
Safety Analysis OK	☒ YES	☐ NO*	☐ NOT APPLICABLE
Ownership/Maintenance provisions OK (to be transferred to City of Los Angeles)	☐ YES	☐ NO*	☒ NOT APPLICABLE

* address comments on an attached sheet)

REGISTERED ENGINEER STAMP

REGISTERED PROFESSIONAL ENGINEER
GEORGE RHYNER
NO. 47763
EXP. 12/31/03
CIVIL
STATE OF CALIFORNIA

I attest to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions were based.

PERMIT PROPOSAL RECOMMENDED

☐ Yes, as submitted ☐ Yes, with conditions described above ☐ No, as described above

PREPARED BY	TITLE	UNIT	SIGNATURE OF REGISTERED ENGINEER
			George Rhyner
APPROVED BY	TITLE	DATE	DATE 12/15/99

EP 94 0016 REMARKS: SEND ONE COPY OF COMPLETED REPORT TO HEADQUARTERS OFFICE OF PROJECT PLANNING & DESIGN

ATTACHMENT "A"

Normandie Avenue and Artesia Boulevard
Preliminary Construction Cost Estimates

Construction Item	Quantity	Unit Cost	Cost
Removal			
Double yellow	200 L.F.	$1.65	$330
4 inch white dash	800 L.F.	$0.27	$216
Install			
4 inch white dash	880 L.F.	$0.21	$185
8 inch white	500 L.F.	$1.05	$525
Double yellow	500 L.F.	$0.23	$115
White arrows	2 each	$50	$100
Cat Track	150 L.F.	$1.05	$158
Signal modification	L.F.	$	$11,000
		Subtotal	$12,612
		Plus 25% Contingency Factor:	$3,153
		Total	$15,765
		Say	$16,000

ATTACHMENT "C"

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 04-19-1996 INITIALS: EA PERIOD: AM Peak Hour
CASE: Existing (1996)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	236	1760	265	0
EASTBOUND	125	1746	96	0
NORTHBOUND	153	678	56	142
SOUTHBOUND	273	639	78	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	2	1	0	0	5
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	130	N/A	675	675	N/A	N/A
EASTBOUND	69	N/A	460	460	N/A	N/A
NORTHBOUND	153	N/A	339	N/A	56	N/A
SOUTHBOUND	273	N/A	358	358	N/A	N/A

EAST-WEST CRITICAL VOLUMES 744
NORTH-SOUTH CRITICAL VOLUMES 612

THE SUM OF CRITICAL VOLUMES 1356

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.986

LEVEL OF SERVICE ..... E

K:\ICAP4\HRBRGATE\HRBRGT-3 RL1
04-19-1996, 4:39 PM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 04-19-1996 INITIALS: EA PERIOD: PM Peak Hour
CASE: Existing (1996)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	208	1609	147	0
EASTBOUND	192	1880	61	0
NORTHBOUND	187	978	243	103
SOUTHBOUND	290	580	129	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	2	1	0	0	5
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	114	N/A	585	585	N/A	N/A
EASTBOUND	106	N/A	485	485	N/A	N/A
NORTHBOUND	187	N/A	489	N/A	243	N/A
SOUTHBOUND	290	N/A	354	354	N/A	N/A

EAST-WEST CRITICAL VOLUMES 691
NORTH-SOUTH CRITICAL VOLUMES 779

THE SUM OF CRITICAL VOLUMES 1470

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 1.069

LEVEL OF SERVICE ..... F

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04-19-1996, 4:39 PM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 11-20-1997 INITIALS: EA PERIOD: AM Peak Hour
CASE: Future (2006) With Project Plus Mitigation

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	281	2012	278	0
EASTBOUND	134	1833	114	0
NORTHBOUND	187	720	227	80
SOUTHBOUND	286	707	89	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	3	1	0	0	6
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	0	1	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	155	N/A	572	572	N/A	N/A
EASTBOUND	74	N/A	487	487	N/A	N/A
NORTHBOUND	187	N/A	360	N/A	227	N/A
SOUTHBOUND	157	N/A	398	398	N/A	N/A

EAST-WEST CRITICAL VOLUMES 646
NORTH-SOUTH CRITICAL VOLUMES 585

THE SUM OF CRITICAL VOLUMES 1231

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.895

LEVEL OF SERVICE ..... D

K:\ICAP4\HRBRGATE\TOTREV04 RL4
11-20-1997, 9:33 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 11-20-1997 INITIALS: EA PERIOD: PM Peak Hour
CASE: Future (2006) With Project Plus Mitigation

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	250	1848	240	0
EASTBOUND	199	1950	69	0
NORTHBOUND	200	1084	397	69
SOUTHBOUND	301	635	159	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	3	1	0	0	6
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	0	1	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	138	N/A	522	522	N/A	N/A
EASTBOUND	109	N/A	505	505	N/A	N/A
NORTHBOUND	200	N/A	542	N/A	397	N/A
SOUTHBOUND	166	N/A	397	397	N/A	N/A

EAST-WEST CRITICAL VOLUMES 643
NORTH-SOUTH CRITICAL VOLUMES 708

THE SUM OF CRITICAL VOLUMES 1351

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.983

LEVEL OF SERVICE ..... E

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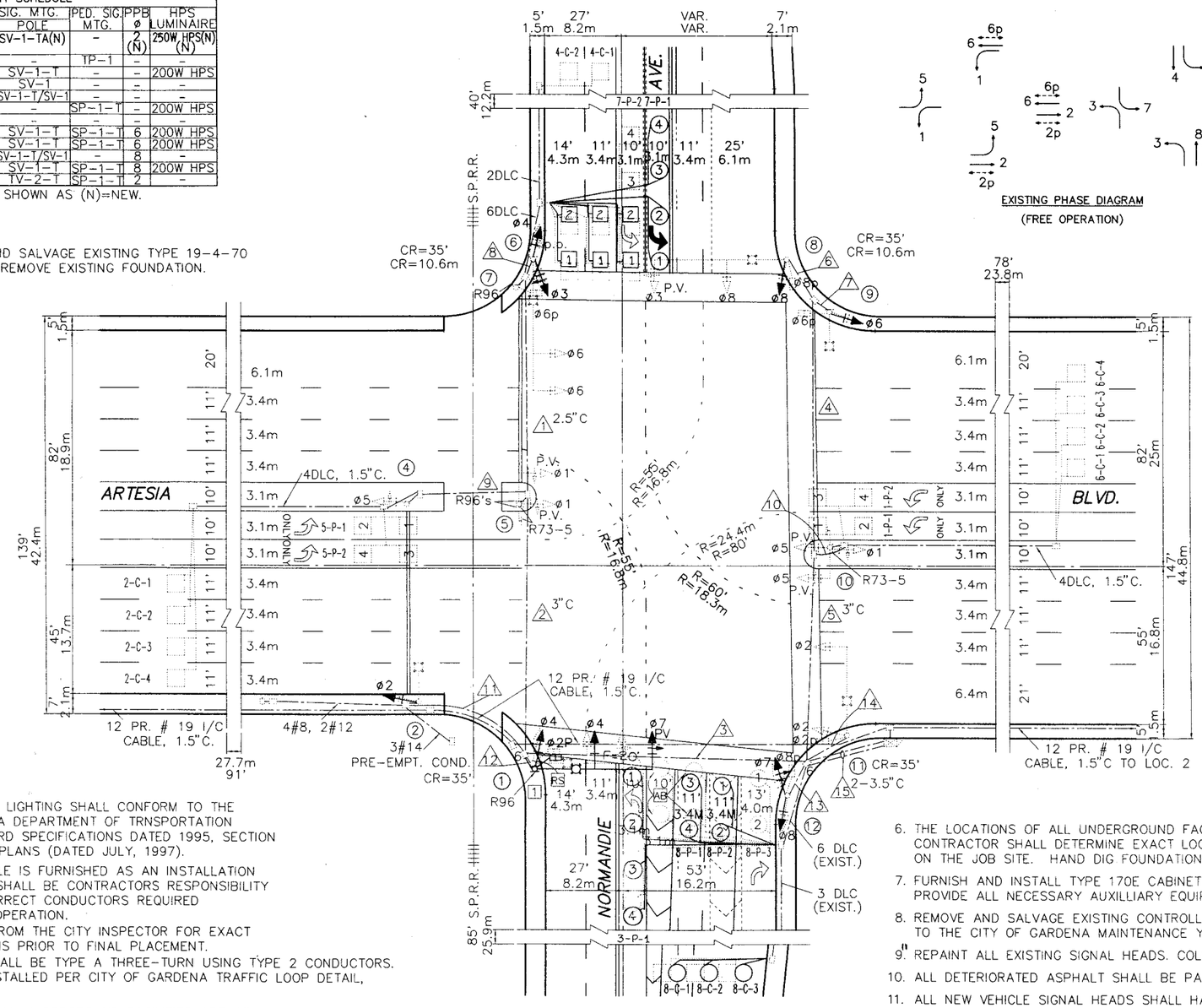
11-20-1997, 9:33 AM

POLE AND EQUIPMENT SCHEDULE								
No.	STANDARD			VEH. SIG. MTG.		PED. SIG. MTG.	PPB	HPS LUMINAIRE
	TYPE	SIG. M.A	LUM. M.A	MAST	POLE		ø	
①	26-3-70 (N)	40' (N)	12' (N)	MAS(N) MAS(N)	SV-1-TA(N)	-	2 (N)	250W HPS(N) (N)
②	1A-10'	-	-	-	-	TP-1	-	-
③	15	-	12'	-	SV-1-T	-	-	200W HPS
④	1A-10'	-	-	-	SV-1	-	-	-
⑤	33	10'	-	MAS	SV-1-T/SV-1	-	-	-
⑥	26-4-70	45'	12'	MAS	-	SP-1-T	-	200W HPS
⑦	1A-7'	-	-	-	-	-	-	-
⑧	26-4-70	45'	12'	MAS	SV-1-T	SP-1-T	6	200W HPS
⑨	15	-	12'	-	SV-1-T	SP-1-T	6	200W HPS
⑩	33	10'	-	MAS	SV-1-T/SV-1	-	8	-
⑪	17-2-70	30'	12'	MAS	SV-1-T	SP-1-T	8	200W HPS
⑫	1A-10'	-	-	-	TV-2-T	SP-1-T	2	-

ALL EQUIPMENT IS EXISTING UNLESS SHOWN AS (N)=NEW.

NOTES:

1 AT LOCATION ① REMOVE AND SALVAGE EXISTING TYPE 19-4-70 POLE AND ASSEMBLY AND REMOVE EXISTING FOUNDATION.



CONDUCTOR SCHEDULE															
SIZE No.	CABLE / WIRE	RUN													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MULTI	3 CONDUCTOR CABLE (N) 3 X #14						1	1	1		1		1	1	1	
	5 CONDUCTOR CABLE (N) 5 X #14						4	2	4	1	3	1	4	3	3	
	28 CONDUCTOR CABLE (N) 27 X #14 & 1 X #10 (COM)	1	2	3	1	2										5
6	SERVICE (E)			2												2
DLC	LOOP CABLE (N)	1	1	1												1
DLC	LOOP CABLE (E)	5	11	11		6										23
12 Pr #19	INTERCONNECT (E)															
10	LUMINAIRE (E)	2	2	2	2	2	2	2	2			2	2	2	2	
12	SIGN LIGHTING (E)	2	2	2	2	2	2	2	2			2	2	2	2	
3 #20	EMER. VEH. DET. CABLE (E)			1												2
	CONDUIT SIZE	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.

REMOVE ALL CONDUCTORS FROM CONDUIT RUN 1-14. REPULL CONDUCTORS AND CABLES SHOWN AS EXISTING (E). AND INSTALL NEW (N) CONDUCTORS.
CLEAN EXISTING CONDUITS AFTER REMOVAL OF EXISTING CONDUCTORS.

GENERAL NOTES:

1. TRAFFIC SIGNAL AND LIGHTING SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF TRNSPORTATION (CALTRANS) STANDARD SPECIFICATIONS DATED 1995, SECTION 86, AND STANDARD PLANS (DATED JULY, 1997).
2. CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE CONTRACTORS RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
3. OBTAIN APPROVAL FROM THE CITY INSPECTOR FOR EXACT EQUIPMENT LOCATIONS PRIOR TO FINAL PLACEMENT.
4. LOOP DETECTORS SHALL BE TYPE A THREE-TURN USING TYPE 2 CONDUCTORS. LOOPS SHALL BE INSTALLED PER CITY OF GARDENA TRAFFIC LOOP DETAIL, DWG. NO. ST-24.
5. THE LOCATIONS OF ALL UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTIONS. TELEPHONE UNDERGROUND SERVICE ALERT, AT (800) 422-4133, 48 HOURS PRIOR TO CONSTRUCTION.
6. THE LOCATIONS OF ALL UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTIONS.
7. FURNISH AND INSTALL TYPE 170E CABINET AND SIGNAL CONTROLLER. PROVIDE ALL NECESSARY AUXILLIARY EQUIPMENT FOR THE OPERATION SHOWN.
8. REMOVE AND SALVAGE EXISTING CONTROLLER AND CABINET AND DELIVER IT TO THE CITY OF GARDENA MAINTENANCE YARD.
9. REPAINT ALL EXISTING SIGNAL HEADS. COLOR TO BE APPROVED BY CITY OF GARDENA.
10. ALL DETERIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF LOOPS.
11. ALL NEW VEHICLE SIGNAL HEADS SHALL HAVE 12-INCH LENSES.

SCALE: 1": 20'

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

PLAN PREPARED BY: _____ REGISTERED TRAFFIC ENGINEER DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER NUNZIO J. VIANDICO NO. 1168 Exp. 12-31-98 TRAFFIC STATE OF CALIFORNIA

PLAN RECOMMENDED BY: _____ REGISTERED CIVIL ENGINEER DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER GEORGE RHYNER NO. 047763 Exp. 12-31-99 CIVIL STATE OF CALIFORNIA

NO	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT ENGINEERING DIVISION

PROJECT: HARBOR GATEWAY
LIMITS: ARTESIA BLVD. AT NORMANDIE AVE.

F.B. REF. | DESIGNED BY | DRAWN BY | CHECKED BY

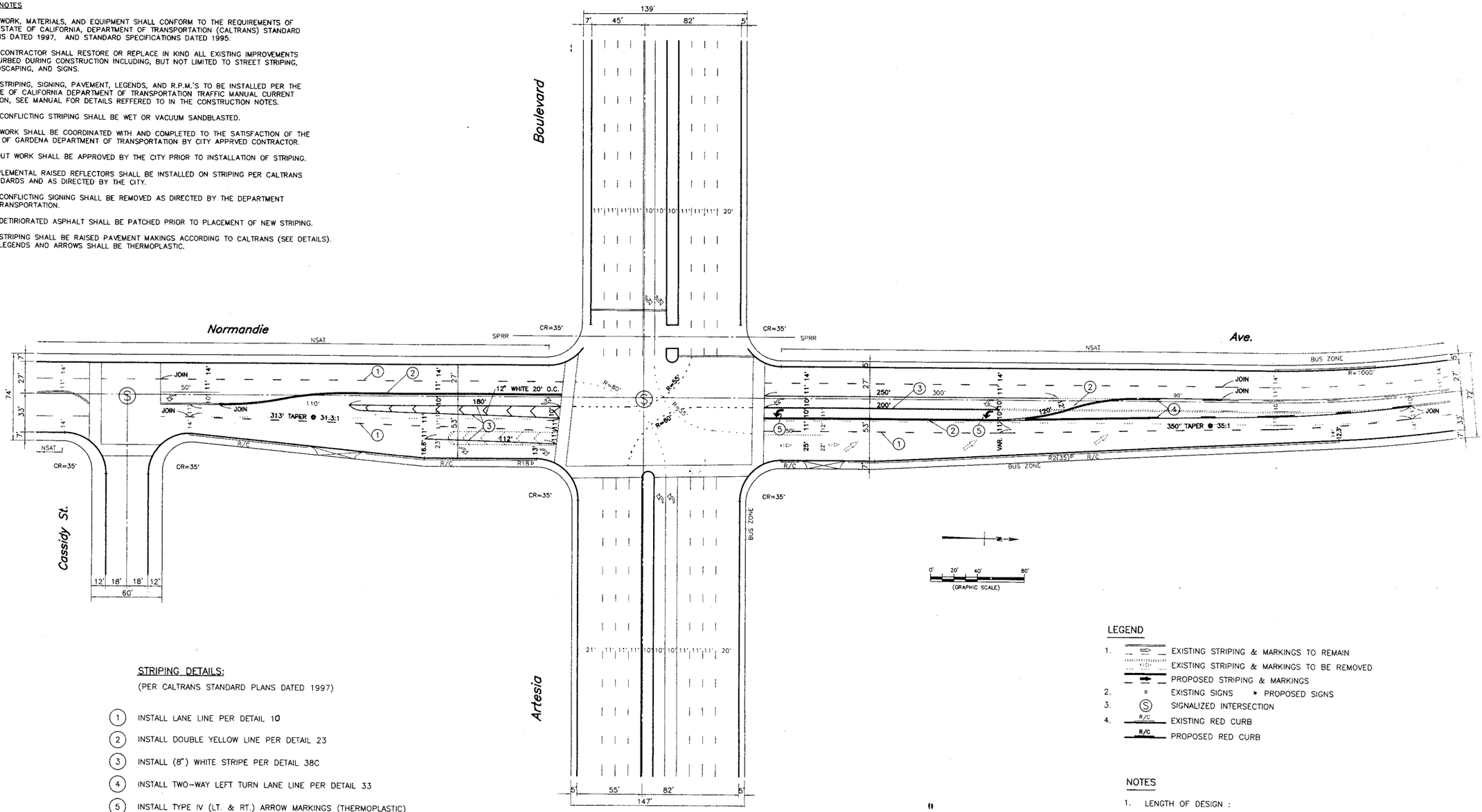
DATE | APPROVED BY: _____ 19 98
CITY ENGINEER R.C.E. NO. 19327

SHT. __ OF __ | DWG. NO. __

BOE-C6-0089980

GENERAL NOTES

1. ALL WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS DATED 1997, AND STANDARD SPECIFICATIONS DATED 1995.
2. THE CONTRACTOR SHALL RESTORE OR REPLACE IN KIND ALL EXISTING IMPROVEMENTS DISTURBED DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO STREET STRIPING, LANDSCAPING, AND SIGNS.
3. ALL STRIPING, SIGNING, PAVEMENT, LEGENDS, AND R.P.M.'S TO BE INSTALLED PER THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION TRAFFIC MANUAL CURRENT EDITION, SEE MANUAL FOR DETAILS REFFERED TO IN THE CONSTRUCTION NOTES.
4. ALL CONFLICTING STRIPING SHALL BE WET OR VACUUM SANDBLASTED.
5. ALL WORK SHALL BE COORDINATED WITH AND COMPLETED TO THE SATISFACTION OF THE CITY OF GARDENA DEPARTMENT OF TRANSPORTATION BY CITY APPRVED CONTRACTOR.
6. LAYOUT WORK SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLATION OF STRIPING.
7. SUPPLEMENTAL RAISED REFLECTORS SHALL BE INSTALLED ON STRIPING PER CALTRANS STANDARDS AND AS DIRECTED BY THE CITY.
8. ALL CONFLICTING SIGNING SHALL BE REMOVED AS DIRECTED BY THE DEPARTMENT OF TRANSPORTATION.
9. ALL DETIRIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF NEW STRIPING.
10. ALL STRIPING SHALL BE RAISED PAVEMENT MAKINGS ACCORDING TO CALTRANS (SEE DETAILS). ALL LEGENDS AND ARROWS SHALL BE THERMOPLASTIC.



STRIPING DETAILS:

(PER CALTRANS STANDARD PLANS DATED 1997)

(1) INSTALL LANE LINE PER DETAIL 10
(2) INSTALL DOUBLE YELLOW LINE PER DETAIL 23
(3) INSTALL (8") WHITE STRIPE PER DETAIL 38C
(4) INSTALL TWO-WAY LEFT TURN LANE LINE PER DETAIL 33
(5) INSTALL TYPE IV (LT. & RT.) ARROW MARKINGS (THERMOPLASTIC)

LEGEND

1. EXISTING STRIPING & MARKINGS TO REMAIN
   EXISTING STRIPING & MARKINGS TO BE REMOVED
   PROPOSED STRIPING & MARKINGS
2. EXISTING SIGNS ▸ PROPOSED SIGNS
3. (S) SIGNALIZED INTERSECTION
4. R/C EXISTING RED CURB
   R/C PROPOSED RED CURB

NOTES

1. LENGTH OF DESIGN :
   NORMANDIE AVE. ± 1,095'
2. PAINT REMOVAL REQUIRED.

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

PLAN PREPARED BY:
REGISTERED TRAFFIC ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER VLADO J. VLAHOVIC NO. 1168 Exp. 12-31-98 TRAFFIC STATE OF CALIFORNIA

PLAN RECOMMENDED BY:
REGISTERED CIVIL ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER GEORGE RHYNER NO. 047763 Exp. 12-31-99 CIVIL STATE OF CALIFORNIA

NO.	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT ENGINEERING DIVISION
PROJECT: HARBOR GATEWAY
LIMITS: NORMANDIE AVE. FROM 440' S/O TO 655' N/O ARTESIA BLVD.

F.B. REF. | DATE
DESIGNED BY
DRAWN BY
CHECKED BY

APPROVED BY: 4/21, 19 99
CITY ENGINEER R.C.E. NO. 14327

SHT. OF DWG. NO.

BOE-C6-0089981

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PERMIT ENGINEERING EVALUATION REPORT

TR-0112 (REV. 8/94)

HOURS FOR PREPARING:	PERMIT NO.:
DATE: 12/15/99	DIST/CO/RTE/PM: 07/LA/91/5.51
EA USED: Harbor Gateway Center	APPLICANT: Boeing Realty Corporation

1. DESCRIBE PERMIT PROPOSAL, WHAT IT SERVES, APPROXIMATE COST.

Artesia Boulevard (SR-91) passes north of the 170-acre multi-use retail/industrial facility being constructed on the site of a former Boeing Aircraft manufacturing facility. As part of the Harbor Gateway Center traffic mitigation recommendations, projected traffic conditions would require southbound lanes on Normandie Avenue to be restriped for dual left turn lanes. Northbound Normandie Avenue lanes would be adjusted to match lane changes on the north side of the intersection, allowing for a smooth through traffic flow. These changes will take place to the City of Gardena facilities. No existing lane markings in the State right-of-way will be changed. The City of Gardena controls the signalization of the intersection. One existing signal pole and mast arm will be replaced on the southwest corner of Normandie Avenue. All northbound and southbound Normandie Avenue mastheads will be replaced and upgraded from eight-inch to twelve-inch lenses. Loop detectors in Normandie Avenue at Artesia Boulevard will also be replaced. The cost of improvements would be $15,765 to be born by the applicant. See Attachment A.

2. DESCRIBE EXISTING HIGHWAY - BRIEF ANALYSIS OF IMPACT ON HIGHWAY OPERATION, AND MAINTENANCE.

The Normandie Avenue and Artesia Boulevard (SR-91) intersection located in the City of Gardena. Signals at this intersection are controlled by Gardena. At the intersection, Artesia Boulevard has three through lanes, one shared through and right turn lane, and two left turn lanes. An existing center divider separates eastbound from westbound traffic. Northbound Normandie Avenue contains a dedicated right turn lane, two through lanes and one left turn lane. A painted median separates the dedicated right turn lane from the number one through lane. Southbound Normandie Avenue contains two through lanes, one shared through and right turn lane, and one dedicated left turn lane. The proposal would improve traffic operations at this intersection. These changes will have no appreciable impacts on highway maintenance which are already part of existing programs.

3. ANALYSIS OF PERMIT PROPOSAL FOR GEOMETRIC AND FUNCTIONAL ADEQUACY.

No geometric changes will take place in the State right of way. The additional southbound left turn lane on Normandie Avenue will accommodate future traffic volumes, as shown in the results of the critical movement analysis summary for the intersection of Normandie Avenue and Artesia Boulevard (see Attachment C).

3a. NON-STANDARD DESIGN FEATURES? YES ☐ NO ☒

If YES above, provide rationale, name and date of Project Development reviewer's concurrence. (on Federal Aid Projects, FHWA concurrence)

4. REVISION IN ACCESS CONTROL OR TRANSFER OR R/W TO PERMITTEE INVOLVED: YES ☐ NO ☒

4a. IF YES, DATE OF DISTRICT DIRECTOR APPROVAL

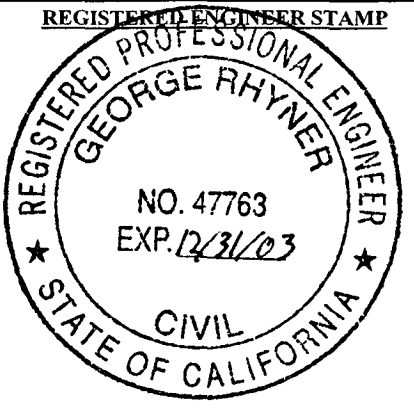
4b. IF INTERSTATE, DATE OF FHWA APPROVAL

5. SIGNALIZATION INVOLVED: ☒ YES ☐ NO

If yes, signal warrants met (see Attachment B)	☐ YES	☐ NO*	☒ NOT APPLICABLE
Capacity Analysis OK (see Attachment C)	☒ YES	☐ NO*	☐ NOT APPLICABLE
Safety Analysis OK	☒ YES	☐ NO*	☐ NOT APPLICABLE
Ownership/Maintenance provisions OK (to be transferred to City of Los Angeles)	☐ YES	☐ NO*	☒ NOT APPLICABLE

* address comments on an attached sheet)

REGISTERED ENGINEER STAMP



I attest to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions were based.

PERMIT PROPOSAL RECOMMENDED

☐ Yes, as submitted ☐ Yes, with conditions described above ☐ No, as described above

PREPARED BY	TITLE	UNIT	SIGNATURE OF REGISTERED ENGINEER George Rhyner
APPROVED BY	TITLE	DATE	DATE 12/15/99

EP 94 0016 REMARKS: SEND ONE COPY OF COMPLETED REPORT TO HEADQUARTERS OFFICE OF PROJECT PLANNING & DESIGN

ATTACHMENT "A"

Normandie Avenue and Artesia Boulevard
Preliminary Construction Cost Estimates

Construction Item	Quantity	Unit Cost	Cost
Removal			
Double yellow	200 L.F.	$1.65	$330
4 inch white dash	800 L.F.	$0.27	$216
Install			
4 inch white dash	880 L.F.	$0.21	$185
8 inch white	500 L.F.	$1.05	$525
Double yellow	500 L.F.	$0.23	$115
White arrows	2 each	$50	$100
Cat Track	150 L.F.	$1.05	$158
Signal modification	L.F.	$	$11,000
		Subtotal	$12,612
		Plus 25% Contingency Factor:	$3,153
		Total	$15,765
		Say	$16,000

ATTACHMENT "C"

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 04-19-1996 INITIALS: EA PERIOD: AM Peak Hour
CASE: Existing (1996)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	236	1760	265	0
EASTBOUND	125	1746	96	0
NORTHBOUND	153	678	56	142
SOUTHBOUND	273	639	78	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	2	1	0	0	5
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	130	N/A	675	675	N/A	N/A
EASTBOUND	69	N/A	460	460	N/A	N/A
NORTHBOUND	153	N/A	339	N/A	56	N/A
SOUTHBOUND	273	N/A	358	358	N/A	N/A

EAST-WEST CRITICAL VOLUMES 744
NORTH-SOUTH CRITICAL VOLUMES 612

THE SUM OF CRITICAL VOLUMES 1356

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.986

LEVEL OF SERVICE ..... E

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CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 04-19-1996 INITIALS: EA PERIOD: PM Peak Hour
CASE: Existing (1996)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	208	1609	147	0
EASTBOUND	192	1880	61	0
NORTHBOUND	187	978	243	103
SOUTHBOUND	290	580	129	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	2	1	0	0	5
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	114	N/A	585	585	N/A	N/A
EASTBOUND	106	N/A	485	485	N/A	N/A
NORTHBOUND	187	N/A	489	N/A	243	N/A
SOUTHBOUND	290	N/A	354	354	N/A	N/A

EAST-WEST CRITICAL VOLUMES 691
NORTH-SOUTH CRITICAL VOLUMES 779

THE SUM OF CRITICAL VOLUMES 1470

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 1.069

LEVEL OF SERVICE ..... F

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CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 11-20-1997 INITIALS: EA PERIOD: AM Peak Hour
CASE: Future (2006) With Project Plus Mitigation

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS **	
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	281	2012	278	0
EASTBOUND	134	1833	114	0
NORTHBOUND	187	720	227	80
SOUTHBOUND	286	707	89	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	3	1	0	0	6
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	0	1	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	155	N/A	572	572	N/A	N/A
EASTBOUND	74	N/A	487	487	N/A	N/A
NORTHBOUND	187	N/A	360	N/A	227	N/A
SOUTHBOUND	157	N/A	398	398	N/A	N/A

EAST-WEST CRITICAL VOLUMES 646
NORTH-SOUTH CRITICAL VOLUMES 585

THE SUM OF CRITICAL VOLUMES 1231

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.895

LEVEL OF SERVICE ..... D

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CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 11-20-1997 INITIALS: EA PERIOD: PM Peak Hour
CASE: Future (2006) With Project Plus Mitigation

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	250	1848	240	0
EASTBOUND	199	1950	69	0
NORTHBOUND	200	1084	397	69
SOUTHBOUND	301	635	159	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	3	1	0	0	6
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	0	1	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	138	N/A	522	522	N/A	N/A
EASTBOUND	109	N/A	505	505	N/A	N/A
NORTHBOUND	200	N/A	542	N/A	397	N/A
SOUTHBOUND	166	N/A	397	397	N/A	N/A

EAST-WEST CRITICAL VOLUMES	643
NORTH-SOUTH CRITICAL VOLUMES	708
THE SUM OF CRITICAL VOLUMES	1351
NUMBER OF CRITICAL CLEARANCE INTERVALS	4
CMA VALUE	0.983
LEVEL OF SERVICE	E

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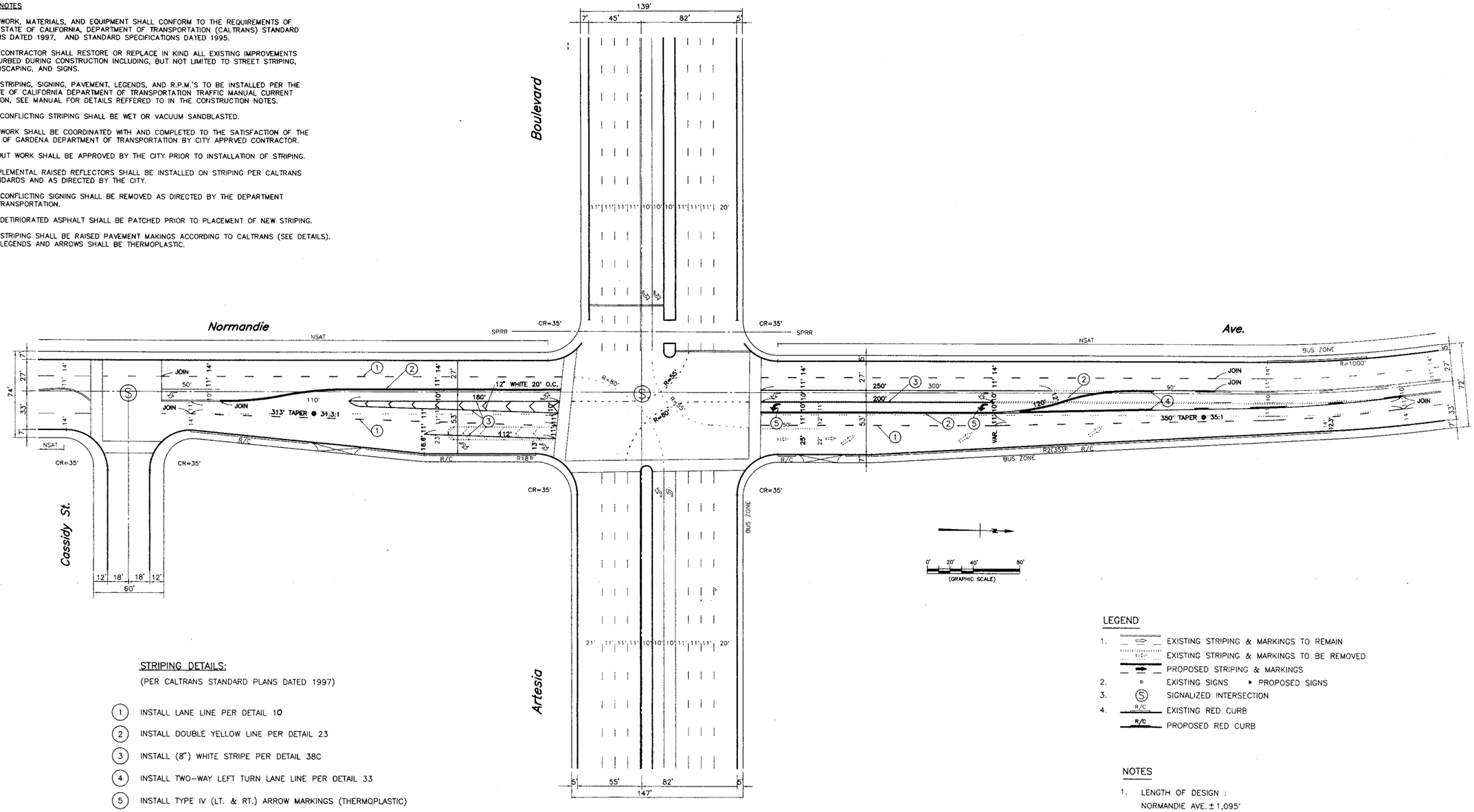
GENERAL NOTES

1. ALL WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS DATED 1997, AND STANDARD SPECIFICATIONS DATED 1995.
2. THE CONTRACTOR SHALL RESTORE OR REPLACE IN KIND ALL EXISTING IMPROVEMENTS DISTURBED DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO STREET STRIPING, LANDSCAPING, AND SIGNS.
3. ALL STRIPING, SIGNING, PAVEMENT, LEGENDS, AND R.P.M.'S TO BE INSTALLED PER THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION TRAFFIC MANUAL CURRENT EDITION, SEE MANUAL FOR DETAILS REFFERED TO IN THE CONSTRUCTION NOTES.
4. ALL CONFLICTING STRIPING SHALL BE WET OR VACUUM SANDBLASTED.
5. ALL WORK SHALL BE COORDINATED WITH AND COMPLETED TO THE SATISFACTION OF THE CITY OF GARDENA DEPARTMENT OF TRANSPORTATION BY CITY APPRVED CONTRACTOR.
6. LAYOUT WORK SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLATION OF STRIPING.
7. SUPPLEMENTAL RAISED REFLECTORS SHALL BE INSTALLED ON STRIPING PER CALTRANS STANDARDS AND AS DIRECTED BY THE CITY.
8. ALL CONFLICTING SIGNING SHALL BE REMOVED AS DIRECTED BY THE DEPARTMENT OF TRANSPORTATION.
9. ALL DETIRIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF NEW STRIPING.
10. ALL STRIPING SHALL BE RAISED PAVEMENT MAKINGS ACCORDING TO CALTRANS (SEE DETAILS). ALL LEGENDS AND ARROWS SHALL BE THERMOPLASTIC.



STRIPING DETAILS:

(PER CALTRANS STANDARD PLANS DATED 1997)

(1) INSTALL LANE LINE PER DETAIL 10
(2) INSTALL DOUBLE YELLOW LINE PER DETAIL 23
(3) INSTALL (8") WHITE STRIPE PER DETAIL 38C
(4) INSTALL TWO-WAY LEFT TURN LANE LINE PER DETAIL 33
(5) INSTALL TYPE IV (LT. & RT.) ARROW MARKINGS (THERMOPLASTIC)

LEGEND

1. EXISTING STRIPING & MARKINGS TO REMAIN
   EXISTING STRIPING & MARKINGS TO BE REMOVED
   PROPOSED STRIPING & MARKINGS
2. EXISTING SIGNS ▸ PROPOSED SIGNS
3. (S) SIGNALIZED INTERSECTION
4. R/C EXISTING RED CURB
   R/C PROPOSED RED CURB

NOTES

1. LENGTH OF DESIGN :
   NORMANDIE AVE. ± 1,095'
2. PAINT REMOVAL REQUIRED.

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

PLAN PREPARED BY:
REGISTERED TRAFFIC ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER VLADO J. VLAHOVIC NO. 1168 Exp. 12-31-98 TRAFFIC STATE OF CALIFORNIA

PLAN RECOMMENDED BY:
REGISTERED CIVIL ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER GEORGE RAYNER NO. 047763 Exp. 12-31-99 CIVIL STATE OF CALIFORNIA

NO	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT ENGINEERING DIVISION
PROJECT: HARBOR GATEWAY
LIMITS: NORMANDIE AVE. FROM 440' S/O TO 655' N/O ARTESIA BLVD.

F.B. REF. | DATE
DESIGNED BY
DRAWN BY
CHECKED BY

APPROVED BY: 12/ , 19 98
CITY ENGINEER R.C.E. NO. 19827
SHT. OF DWG. NO.

BOE-C6-0089989

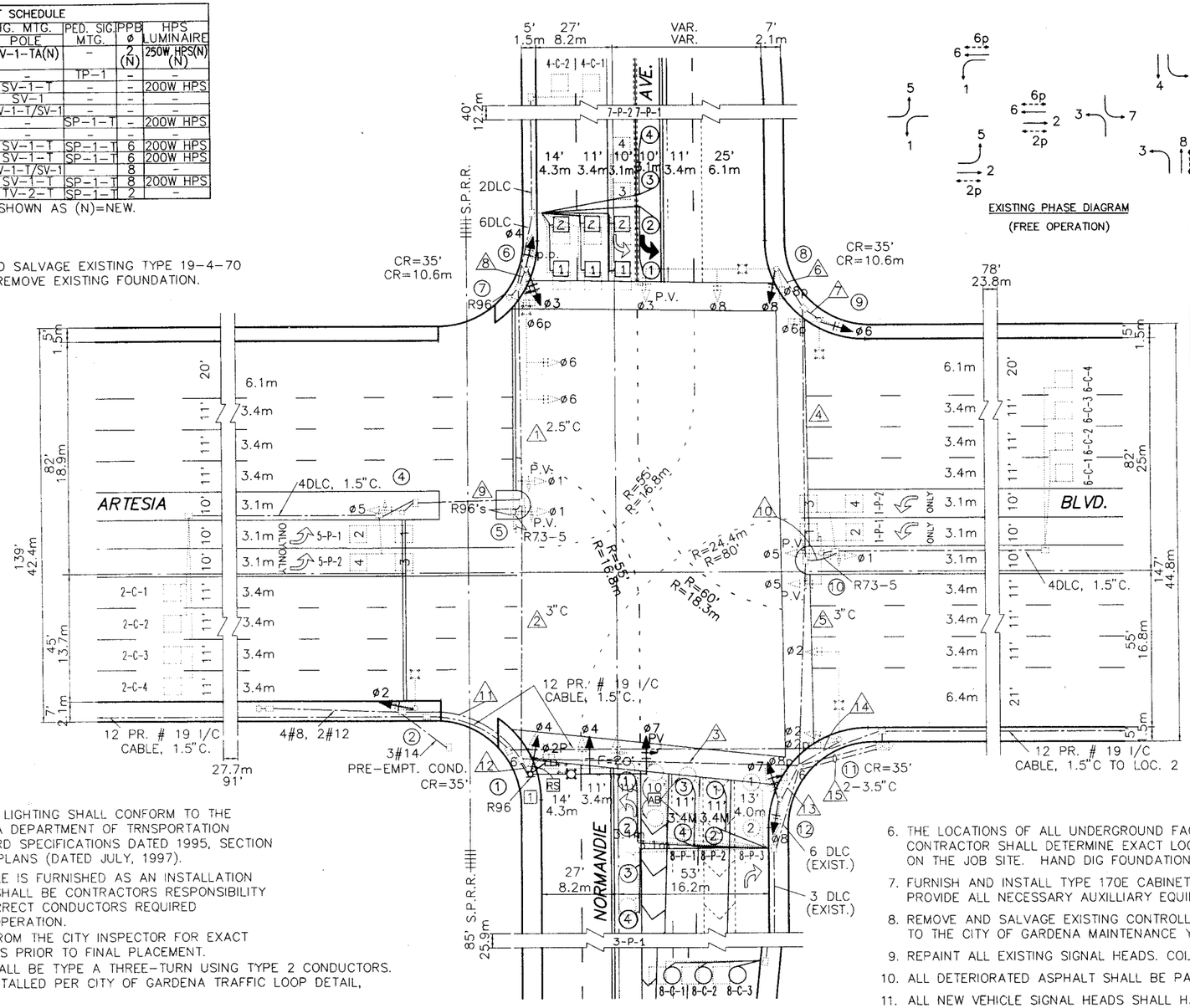
POLE AND EQUIPMENT SCHEDULE

No.	STANDARD TYPE	STANDARD SIG. M.A	STANDARD LUM. M.A	VEH. SIG. MTG. MAST	VEH. SIG. MTG. POLE	PED. SIG. MTG.	PPB ø	HPS LUMINAIRE
①	26-3-70 (N)	40' (N)	12' (N)	MAS(N) MAS(N)	SV-1-TA(N)	-	2 (N)	250W HPS(N) (N)
②	1A-10'	-	-	-	-	TP-1	-	-
③	15	-	12'	-	SV-1-T	-	-	200W HPS
④	1A-10'	-	-	-	SV-1	-	-	-
⑤	33	10'	-	MAS	SV-1-T/SV-1	-	-	-
⑥	26-4-70	45'	12'	MAS	-	SP-1-T	-	200W HPS
⑦	1A-7'	-	-	-	-	-	-	-
⑧	26-4-70	45'	12'	MAS	SV-1-T	SP-1-T	6	200W HPS
⑨	15	-	12'	-	SV-1-T	SP-1-T	6	200W HPS
⑩	33	10'	-	MAS	SV-1-T/SV-1	-	8	-
⑪	17-2-70	30'	12'	MAS	SV-1-T	SP-1-T	8	200W HPS
⑫	1A-10'	-	-	-	TV-2-T	SP-1-T	2	-

ALL EQUIPMENT IS EXISTING UNLESS SHOWN AS (N)=NEW.

NOTES:

1 AT LOCATION ① REMOVE AND SALVAGE EXISTING TYPE 19-4-70 POLE AND ASSEMBLY AND REMOVE EXISTING FOUNDATION.



EXISTING PHASE DIAGRAM
(FREE OPERATION)

CONDUCTOR SCHEDULE

SIZE No.	CABLE / WIRE	RUN 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MULTI	3 CONDUCTOR CABLE (N) 3 X #14						1	1	1		1		1	1	1	
MULTI	5 CONDUCTOR CABLE (N) 5 X #14						4	2	4	1	3	1	4	3	3	
MULTI	28 CONDUCTOR CABLE (N) 27 X #14 & 1 X #10 (COM)	1	2	3	1	2										5
6	SERVICE (E)			2												2
DLC	LOOP CABLE (N)	1	1	1												1
DLC	LOOP CABLE (E)	5	11	11		6										23
12 Pr #19	INTERCONNECT (E)															
10	LUMINAIRE (E)	2	2	2	2	2	2	2	2		2	2	2	2		
12	SIGN LIGHTING (E)	2	2	2	2	2	2	2	2		2	2	2	2		
3 #20	EMER. VEH. DET. CABLE (E)			1												2
	CONDUIT SIZE	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.

REMOVE ALL CONDUCTORS FROM CONDUIT RUN 1-14. REPULL CONDUCTORS AND CABLES SHOWN AS EXISTING (E). AND INSTALL NEW (N) CONDUCTORS.
CLEAN EXISTING CONDUITS AFTER REMOVAL OF EXISTING CONDUCTORS.

GENERAL NOTES:

1. TRAFFIC SIGNAL AND LIGHTING SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF TRNSPORTATION (CALTRANS) STANDARD SPECIFICATIONS DATED 1995, SECTION 86, AND STANDARD PLANS (DATED JULY, 1997).
2. CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE CONTRACTORS RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
3. OBTAIN APPROVAL FROM THE CITY INSPECTOR FOR EXACT EQUIPMENT LOCATIONS PRIOR TO FINAL PLACEMENT.
4. LOOP DETECTORS SHALL BE TYPE A THREE-TURN USING TYPE 2 CONDUCTORS. LOOPS SHALL BE INSTALLED PER CITY OF GARDENA TRAFFIC LOOP DETAIL, DWG. NO. ST-24.
5. THE LOCATIONS OF ALL UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTIONS. TELEPHONE UNDERGROUND SERVICE ALERT, AT (800) 422-4133, 48 HOURS PRIOR TO CONSTRUCTION.
6. THE LOCATIONS OF ALL UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTIONS.
7. FURNISH AND INSTALL TYPE 170E CABINET AND SIGNAL CONTROLLER. PROVIDE ALL NECESSARY AUXILLIARY EQUIPMENT FOR THE OPERATION SHOWN.
8. REMOVE AND SALVAGE EXISTING CONTROLLER AND CABINET AND DELIVER IT TO THE CITY OF GARDENA MAINTENANCE YARD.
9. REPAINT ALL EXISTING SIGNAL HEADS. COLOR TO BE APPROVED BY CITY OF GARDENA.
10. ALL DETERIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF LOOPS.
11. ALL NEW VEHICLE SIGNAL HEADS SHALL HAVE 12-INCH LENSES.

SCALE: 1": 20'

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

PLAN PREPARED BY:
REGISTERED TRAFFIC ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER VLADO J. VLAHOVIC NO. 1168 Exp. 12-31-98 TRAFFIC STATE OF CALIFORNIA

PLAN RECOMMENDED BY:
REGISTERED CIVIL ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER GEORGE RHYNER NO. 047763 Exp. 12-31-99 CIVIL STATE OF CALIFORNIA

NO.	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT — ENGINEERING DIVISION
PROJECT: HARBOR GATEWAY
LIMITS: ARTESIA BLVD. AT NORMANDIE AVE.
F.B. REF. | DATE | APPROVED BY: ____ 19 98
DESIGNED BY
DRAWN BY
CHECKED BY
CITY ENGINEER | R.C.E. NO. 19327
SHT. __ OF __ | DWG. NO. __

BOE-C6-0089990

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PERMIT ENGINEERING EVALUATION REPORT

TR-0112 (REV. 8/94)

HOURS FOR PREPARING:	PERMIT NO.:
DATE: 12/15/99	DIST/CO/RTE/PM: 07/LA/91/5.51
EA USED: Harbor Gateway Center	APPLICANT: Boeing Realty Corporation

1. DESCRIBE PERMIT PROPOSAL, WHAT IT SERVES, APPROXIMATE COST.

Artesia Boulevard (SR-91) passes north of the 170-acre multi-use retail/industrial facility being constructed on the site of a former Boeing Aircraft manufacturing facility. As part of the Harbor Gateway Center traffic mitigation recommendations, projected traffic conditions would require southbound lanes on Normandie Avenue to be restriped for dual left turn lanes. Northbound Normandie Avenue lanes would be adjusted to match lane changes on the north side of the intersection, allowing for a smooth through traffic flow. These changes will take place to the City of Gardena facilities. No existing lane markings in the State right-of-way will be changed. The City of Gardena controls the signalization of the intersection. One existing signal pole and mast arm will be replaced on the southwest corner of Normandie Avenue. All northbound and southbound Normandie Avenue mastheads will be replaced and upgraded from eight-inch to twelve-inch lenses. Loop detectors in Normandie Avenue at Artesia Boulevard will also be replaced. The cost of improvements would be $15,765 to be born by the applicant. See Attachment A.

2. DESCRIBE EXISTING HIGHWAY - BRIEF ANALYSIS OF IMPACT ON HIGHWAY OPERATION, AND MAINTENANCE.

The Normandie Avenue and Artesia Boulevard (SR-91) intersection located in the City of Gardena. Signals at this intersection are controlled by Gardena. At the intersection, Artesia Boulevard has three through lanes, one shared through and right turn lane, and two left turn lanes. An existing center divider separates eastbound from westbound traffic. Northbound Normandie Avenue contains a dedicated right turn lane, two through lanes and one left turn lane. A painted median separates the dedicated right turn lane from the number one through lane. Southbound Normandie Avenue contains two through lanes, one shared through and right turn lane, and one dedicated left turn lane. The proposal would improve traffic operations at this intersection. These changes will have no appreciable impacts on highway maintenance which are already part of existing programs.

3. ANALYSIS OF PERMIT PROPOSAL FOR GEOMETRIC AND FUNCTIONAL ADEQUACY.

No geometric changes will take place in the State right of way. The additional southbound left turn lane on Normandie Avenue will accommodate future traffic volumes, as shown in the results of the critical movement analysis summary for the intersection of Normandie Avenue and Artesia Boulevard (see Attachment C).

3a. NON-STANDARD DESIGN FEATURES? YES ☐ NO ☒

If YES above, provide rationale, name and date of Project Development reviewer's concurrence. (on Federal Aid Projects, FHWA concurrence)

4. REVISION IN ACCESS CONTROL OR TRANSFER OR R/W TO PERMITTEE INVOLVED: YES ☐ NO ☒

4a. IF YES, DATE OF DISTRICT DIRECTOR APPROVAL

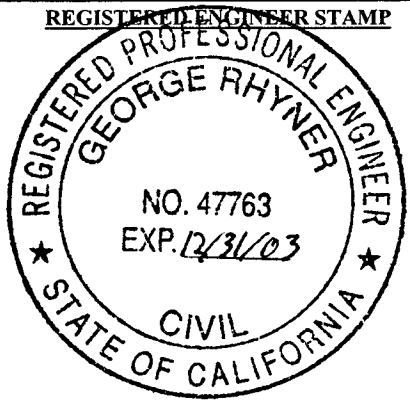
4b. IF INTERSTATE, DATE OF FHWA APPROVAL

5. SIGNALIZATION INVOLVED: ☒ YES ☐ NO

If yes, signal warrants met (see Attachment B)	☐ YES	☐ NO*	☒ NOT APPLICABLE
Capacity Analysis OK (see Attachment C)	☒ YES	☐ NO*	☐ NOT APPLICABLE
Safety Analysis OK	☒ YES	☐ NO*	☐ NOT APPLICABLE
Ownership/Maintenance provisions OK (to be transferred to City of Los Angeles)	☐ YES	☐ NO*	☒ NOT APPLICABLE

* address comments on an attached sheet)

REGISTERED ENGINEER STAMP



I attest to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions were based.

PERMIT PROPOSAL RECOMMENDED

☐ Yes, as submitted ☐ Yes, with conditions described above ☐ No, as described above

PREPARED BY	TITLE	UNIT	SIGNATURE OF REGISTERED ENGINEER George Rhyner
APPROVED BY	TITLE	DATE	DATE 12/15/99

EP 94 0016 REMARKS: SEND ONE COPY OF COMPLETED REPORT TO HEADQUARTERS OFFICE OF PROJECT PLANNING & DESIGN

ATTACHMENT "A"

Normandie Avenue and Artesia Boulevard
Preliminary Construction Cost Estimates

Construction Item	Quantity	Unit Cost	Cost
Removal			
Double yellow	200 L.F.	$1.65	$330
4 inch white dash	800 L.F.	$0.27	$216
Install			
4 inch white dash	880 L.F.	$0.21	$185
8 inch white	500 L.F.	$1.05	$525
Double yellow	500 L.F.	$0.23	$115
White arrows	2 each	$50	$100
Cat Track	150 L.F.	$1.05	$158
Signal modification	L.F.	$	$11,000
		Subtotal	$12,612
		Plus 25% Contingency Factor:	$3,153
		Total	$15,765
		Say	$16,000

ATTACHMENT "C"

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 04-19-1996 INITIALS: EA PERIOD: AM Peak Hour
CASE: Existing (1996)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	236	1760	265	0
EASTBOUND	125	1746	96	0
NORTHBOUND	153	678	56	142
SOUTHBOUND	273	639	78	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	2	1	0	0	5
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	130	N/A	675	675	N/A	N/A
EASTBOUND	69	N/A	460	460	N/A	N/A
NORTHBOUND	153	N/A	339	N/A	56	N/A
SOUTHBOUND	273	N/A	358	358	N/A	N/A

EAST-WEST CRITICAL VOLUMES	744
NORTH-SOUTH CRITICAL VOLUMES	612
THE SUM OF CRITICAL VOLUMES	1356
NUMBER OF CRITICAL CLEARANCE INTERVALS	4
CMA VALUE	0.986
LEVEL OF SERVICE	E

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04-19-1996, 4:39 PM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 04-19-1996 INITIALS: EA PERIOD: PM Peak Hour
CASE: Existing (1996)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	208	1609	147	0
EASTBOUND	192	1880	61	0
NORTHBOUND	187	978	243	103
SOUTHBOUND	290	580	129	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	2	1	0	0	5
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	114	N/A	585	585	N/A	N/A
EASTBOUND	106	N/A	485	485	N/A	N/A
NORTHBOUND	187	N/A	489	N/A	243	N/A
SOUTHBOUND	290	N/A	354	354	N/A	N/A

EAST-WEST CRITICAL VOLUMES 691
NORTH-SOUTH CRITICAL VOLUMES 779

THE SUM OF CRITICAL VOLUMES 1470

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 1.069

LEVEL OF SERVICE ..... F

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04-19-1996, 4:39 PM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 11-20-1997 INITIALS: EA PERIOD: AM Peak Hour
CASE: Future (2006) With Project Plus Mitigation

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	281	2012	278	0
EASTBOUND	134	1833	114	0
NORTHBOUND	187	720	227	80
SOUTHBOUND	286	707	89	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	3	1	0	0	6
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	0	1	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	155	N/A	572	572	N/A	N/A
EASTBOUND	74	N/A	487	487	N/A	N/A
NORTHBOUND	187	N/A	360	N/A	227	N/A
SOUTHBOUND	157	N/A	398	398	N/A	N/A

EAST-WEST CRITICAL VOLUMES 646
NORTH-SOUTH CRITICAL VOLUMES 585

THE SUM OF CRITICAL VOLUMES 1231

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.895

LEVEL OF SERVICE ..... D

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11-20-1997, 9:33 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 11-20-1997 INITIALS: EA PERIOD: PM Peak Hour
CASE: Future (2006) With Project Plus Mitigation

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS ** MIN ON GREEN	MAX ON RED
WESTBOUND	250	1848	240	0
EASTBOUND	199	1950	69	0
NORTHBOUND	200	1084	397	69
SOUTHBOUND	301	635	159	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	3	1	0	0	6
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	0	1	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	138	N/A	522	522	N/A	N/A
EASTBOUND	109	N/A	505	505	N/A	N/A
NORTHBOUND	200	N/A	542	N/A	397	N/A
SOUTHBOUND	166	N/A	397	397	N/A	N/A

EAST-WEST CRITICAL VOLUMES 643
NORTH-SOUTH CRITICAL VOLUMES 708

THE SUM OF CRITICAL VOLUMES 1351

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.983

LEVEL OF SERVICE ..... E

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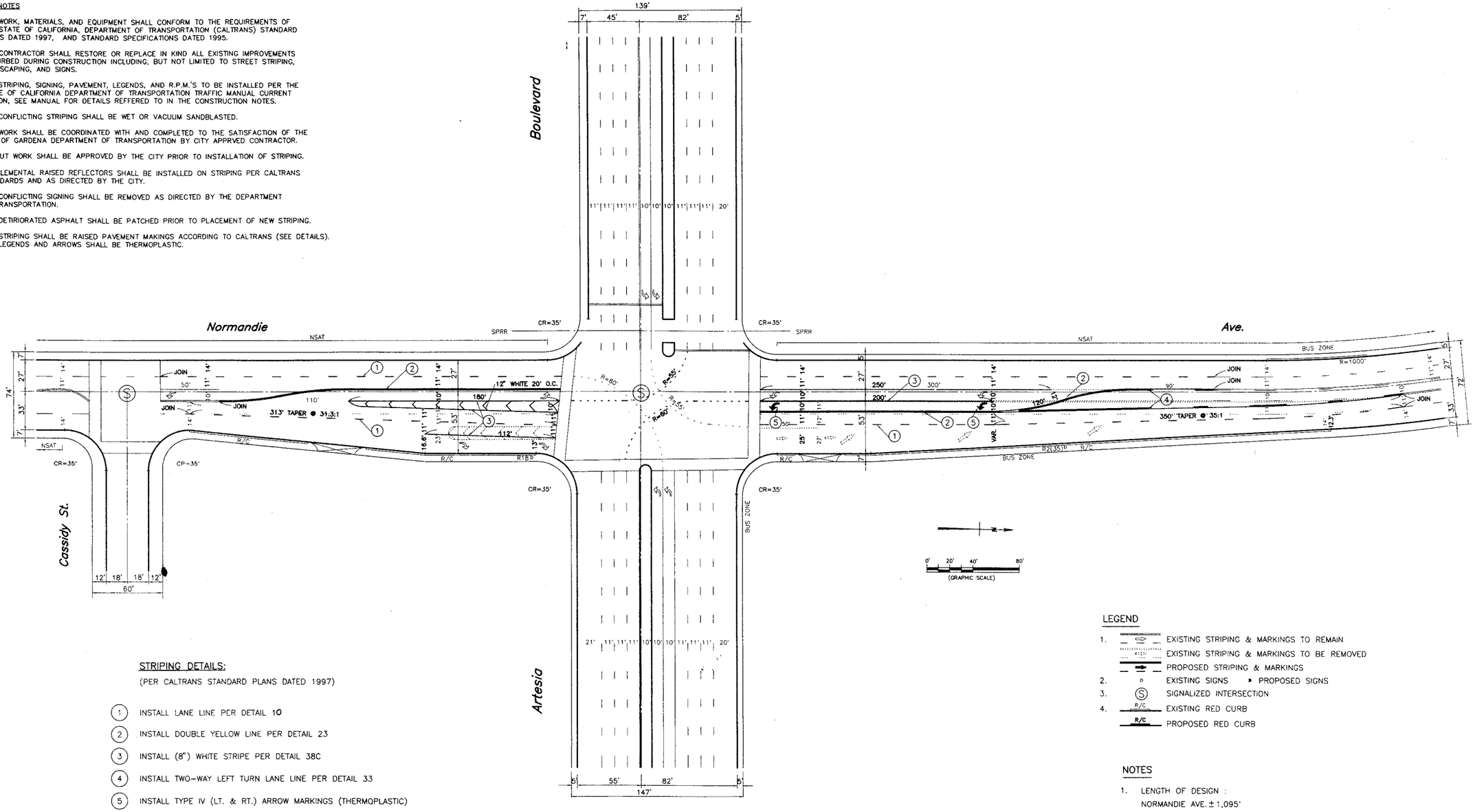
11-20-1997, 9:33 AM

GENERAL NOTES

1. ALL WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS DATED 1997, AND STANDARD SPECIFICATIONS DATED 1995.
2. THE CONTRACTOR SHALL RESTORE OR REPLACE IN KIND ALL EXISTING IMPROVEMENTS DISTURBED DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO STREET STRIPING, LANDSCAPING, AND SIGNS.
3. ALL STRIPING, SIGNING, PAVEMENT, LEGENDS, AND R.P.M.'S TO BE INSTALLED PER THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION TRAFFIC MANUAL CURRENT EDITION, SEE MANUAL FOR DETAILS REFFERED TO IN THE CONSTRUCTION NOTES.
4. ALL CONFLICTING STRIPING SHALL BE WET OR VACUUM SANDBLASTED.
5. ALL WORK SHALL BE COORDINATED WITH AND COMPLETED TO THE SATISFACTION OF THE CITY OF GARDENA DEPARTMENT OF TRANSPORTATION BY CITY APPRVED CONTRACTOR.
6. LAYOUT WORK SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLATION OF STRIPING.
7. SUPPLEMENTAL RAISED REFLECTORS SHALL BE INSTALLED ON STRIPING PER CALTRANS STANDARDS AND AS DIRECTED BY THE CITY.
8. ALL CONFLICTING SIGNING SHALL BE REMOVED AS DIRECTED BY THE DEPARTMENT OF TRANSPORTATION.
9. ALL DETIRIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF NEW STRIPING.
10. ALL STRIPING SHALL BE RAISED PAVEMENT MAKINGS ACCORDING TO CALTRANS (SEE DETAILS). ALL LEGENDS AND ARROWS SHALL BE THERMOPLASTIC.



STRIPING DETAILS:

(PER CALTRANS STANDARD PLANS DATED 1997)

(1) INSTALL LANE LINE PER DETAIL 10
(2) INSTALL DOUBLE YELLOW LINE PER DETAIL 23
(3) INSTALL (8") WHITE STRIPE PER DETAIL 38C
(4) INSTALL TWO-WAY LEFT TURN LANE LINE PER DETAIL 33
(5) INSTALL TYPE IV (LT. & RT.) ARROW MARKINGS (THERMOPLASTIC)

LEGEND

1. EXISTING STRIPING & MARKINGS TO REMAIN
   EXISTING STRIPING & MARKINGS TO BE REMOVED
   PROPOSED STRIPING & MARKINGS
2. P EXISTING SIGNS ▸ PROPOSED SIGNS
3. (S) SIGNALIZED INTERSECTION
4. R/C EXISTING RED CURB
   R/C PROPOSED RED CURB

NOTES

1. LENGTH OF DESIGN :
   NORMANDIE AVE. ± 1,095'
2. PAINT REMOVAL REQUIRED.

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

PLAN PREPARED BY:
REGISTERED TRAFFIC ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER VLADO J. VLAHOVIC NO. 1168 Exp. 12-31-98 TRAFFIC STATE OF CALIFORNIA

PLAN RECOMMENDED BY:
REGISTERED CIVIL ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER GEORGE RHYNER NO. 047763 Exp. 12-31-99 CIVIL STATE OF CALIFORNIA

NO.	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT ENGINEERING DIVISION
PROJECT: HARBOR GATEWAY
LIMITS: NORMANDIE AVE. FROM 440' S/O TO 655' N/O ARTESIA BLVD.

F.B. REF. | DATE | APPROVED BY: _____ 19 98
DESIGNED BY
DRAWN BY
CHECKED BY
CITY ENGINEER R.C.E. NO. 19127
SHT. OF DWG. NO.

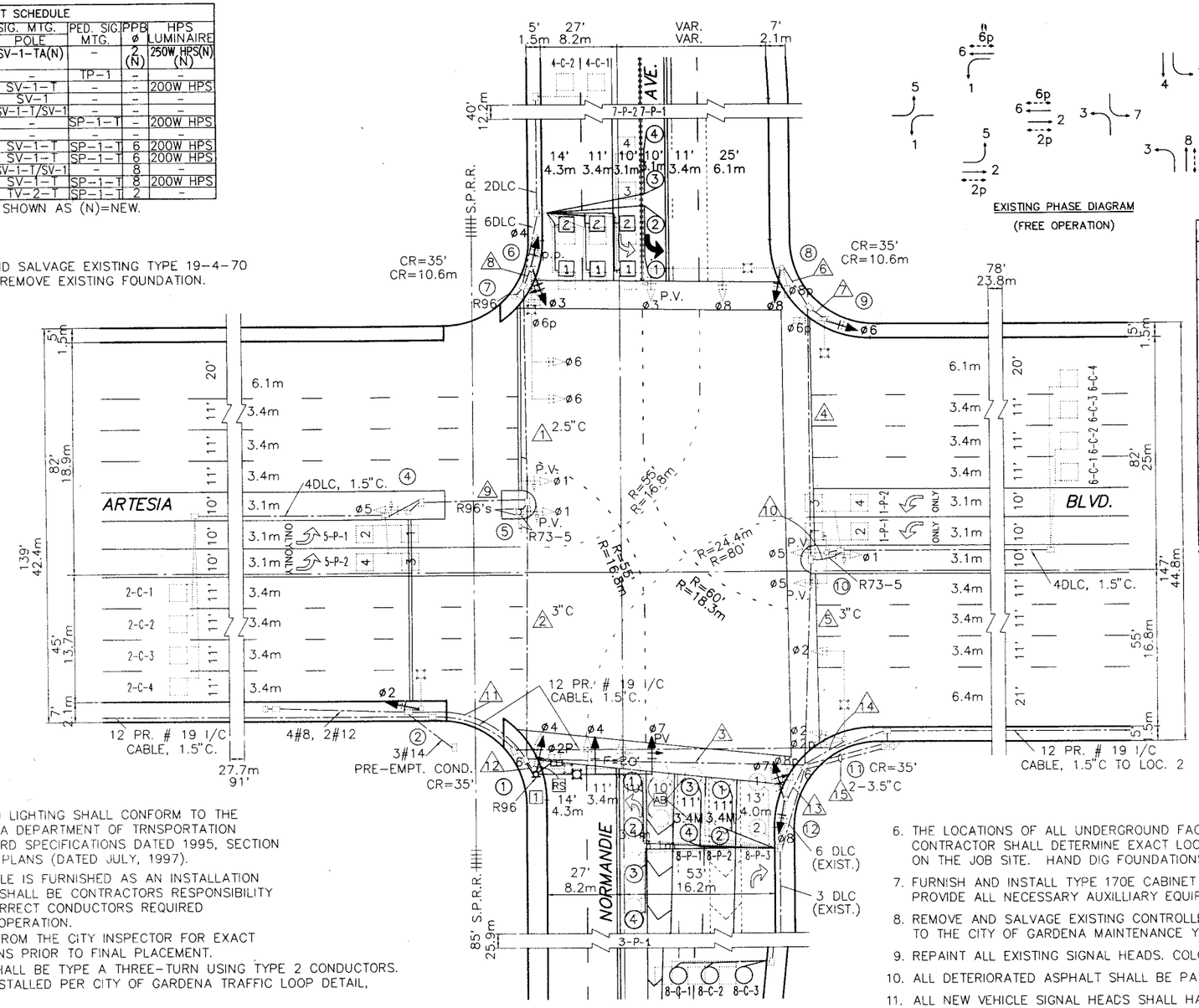
BOE-C6-0089998

POLE AND EQUIPMENT SCHEDULE								
No.	STANDARD TYPE	SIG. M.A (N)	LUM. M.A (N)	VEH. SIG. MTG. MAST	VEH. SIG. MTG. POLE	PED. SIG. MTG.	PPB ø (N)	HPS LUMINAIRE (N)
①	26-3-70	40'	12'	MAS(N) MAS(N)	SV-1-TA(N)	-	2	250W HPS(N)
②	1A-10'	-	-	-	-	TP-1	-	-
③	15	-	12'	-	SV-1-T	-	-	200W HPS
④	1A-10'	-	-	-	SV-1	-	-	-
⑤	33	10'	-	MAS	SV-1-T/SV-1	-	-	-
⑥	26-4-70	45'	12'	MAS	-	SP-1-T	-	200W HPS
⑦	1A-7'	-	-	-	-	-	-	-
⑧	26-4-70	45'	12'	MAS	SV-1-T	SP-1-T	6	200W HPS
⑨	15	-	12'	-	SV-1-T	SP-1-T	6	200W HPS
⑩	33	10'	-	MAS	SV-1-T/SV-1	-	-	-
⑪	17-2-70	30'	12'	MAS	SV-1-T	SP-1-T	2	200W HPS
⑫	1A-10'	-	-	-	TV-2-T	SP-1-T	2	-

ALL EQUIPMENT IS EXISTING UNLESS SHOWN AS (N)=NEW.

NOTES:

1 AT LOCATION ① REMOVE AND SALVAGE EXISTING TYPE 19-4-70 POLE AND ASSEMBLY AND REMOVE EXISTING FOUNDATION.



EXISTING PHASE DIAGRAM
(FREE OPERATION)

CONDUCTOR SCHEDULE																
SIZE No.	CABLE / WIRE	RUN 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MULTI	3 CONDUCTOR CABLE (N) 3 X #14						1	1	1		1		1	1	1	
MULTI	5 CONDUCTOR CABLE (N) 5 X #14						4	2	4	1	3	1	4	3	3	
MULTI	28 CONDUCTOR CABLE (N) 27 X #14 & 1 X #10 (COM)	1	2	3	1	2										5
6	SERVICE (E)			2												2
DLC	LOOP CABLE (N)	1	1	1												1
DLC	LOOP CABLE (E)	5	11	11		6										23
12 Pr #19	INTERCONNECT (E)															
10	LUMINAIRE (E)	2	2	2	2	2	2	2	2			2	2	2	2	
12	SIGN LIGHTING (E)	2	2	2	2	2	2	2	2			2	2	2	2	
3 #20	EMER. VEH. DET. CABLE (E)			1												2
	CONDUIT SIZE	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.

REMOVE ALL CONDUCTORS FROM CONDUIT RUN 1-14. REPULL CONDUCTORS AND CABLES SHOWN AS EXISTING (E). AND INSTALL NEW (N) CONDUCTORS.
CLEAN EXISTING CONDUITS AFTER REMOVAL OF EXISTING CONDUCTORS.

GENERAL NOTES:

1. TRAFFIC SIGNAL AND LIGHTING SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF TRNSPORTATION (CALTRANS) STANDARD SPECIFICATIONS DATED 1995, SECTION 86, AND STANDARD PLANS (DATED JULY, 1997).
2. CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE CONTRACTORS RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
3. OBTAIN APPROVAL FROM THE CITY INSPECTOR FOR EXACT EQUIPMENT LOCATIONS PRIOR TO FINAL PLACEMENT.
4. LOOP DETECTORS SHALL BE TYPE A THREE-TURN USING TYPE 2 CONDUCTORS. LOOPS SHALL BE INSTALLED PER CITY OF GARDENA TRAFFIC LOOP DETAIL, DWG. NO. ST-24.
5. THE LOCATIONS OF ALL UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTIONS. TELEPHONE UNDERGROUND SERVICE ALERT, AT (800) 422-4133, 48 HOURS PRIOR TO CONSTRUCTION.
6. THE LOCATIONS OF ALL UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTIONS.
7. FURNISH AND INSTALL TYPE 170E CABINET AND SIGNAL CONTROLLER. PROVIDE ALL NECESSARY AUXILLIARY EQUIPMENT FOR THE OPERATION SHOWN.
8. REMOVE AND SALVAGE EXISTING CONTROLLER AND CABINET AND DELIVER IT TO THE CITY OF GARDENA MAINTENANCE YARD.
9. REPAINT ALL EXISTING SIGNAL HEADS. COLOR TO BE APPROVED BY CITY OF GARDENA.
10. ALL DETERIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF LOOPS.
11. ALL NEW VEHICLE SIGNAL HEADS SHALL HAVE 12-INCH LENSES.

SCALE: 1":20'

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

PLAN PREPARED BY:
REGISTERED TRAFFIC ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER VLADO J. VLAHOVIC NO. 1168 Exp. 12-31-98 TRAFFIC STATE OF CALIFORNIA

PLAN RECOMMENDED BY:
REGISTERED CIVIL ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER GEORGE F. RHYNER NO. 047763 Exp. 12-31-99 CIVIL STATE OF CALIFORNIA

NO.	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT ENGINEERING DIVISION
PROJECT: HARBOR GATEWAY
LIMITS: ARTESIA BLVD. AT NORMANDIE AVE.

F.B. REF.		DATE	APPROVED BY:	19
DESIGNED BY			CITY ENGINEER	R.C.E. NO. 47327
DRAWN BY			SHT. OF	DWG. NO.
CHECKED BY				

BOE-C6-0089999

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PERMIT ENGINEERING EVALUATION REPORT

TR-0112 (REV. 8/94)

HOURS FOR PREPARING:	PERMIT NO.:
DATE: 12/15/99	DIST/CO/RTE/PM: 07/LA/91/5.51
EA USED: Harbor Gateway Center	APPLICANT: Boeing Realty Corporation

1. DESCRIBE PERMIT PROPOSAL, WHAT IT SERVES, APPROXIMATE COST.

Artesia Boulevard (SR-91) passes north of the 170-acre multi-use retail/industrial facility being constructed on the site of a former Boeing Aircraft manufacturing facility. As part of the Harbor Gateway Center traffic mitigation recommendations, projected traffic conditions would require southbound lanes on Normandie Avenue to be restriped for dual left turn lanes. Northbound Normandie Avenue lanes would be adjusted to match lane changes on the north side of the intersection, allowing for a smooth through traffic flow. These changes will take place to the City of Gardena facilities. No existing lane markings in the State right-of-way will be changed. The City of Gardena controls the signalization of the intersection. One existing signal pole and mast arm will be replaced on the southwest corner of Normandie Avenue. All northbound and southbound Normandie Avenue mastheads will be replaced and upgraded from eight-inch to twelve-inch lenses. Loop detectors in Normandie Avenue at Artesia Boulevard will also be replaced. The cost of improvements would be $15,765 to be born by the applicant. See Attachment A.

2. DESCRIBE EXISTING HIGHWAY - BRIEF ANALYSIS OF IMPACT ON HIGHWAY OPERATION, AND MAINTENANCE.

The Normandie Avenue and Artesia Boulevard (SR-91) intersection located in the City of Gardena. Signals at this intersection are controlled by Gardena. At the intersection, Artesia Boulevard has three through lanes, one shared through and right turn lane, and two left turn lanes. An existing center divider separates eastbound from westbound traffic. Northbound Normandie Avenue contains a dedicated right turn lane, two through lanes and one left turn lane. A painted median separates the dedicated right turn lane from the number one through lane. Southbound Normandie Avenue contains two through lanes, one shared through and right turn lane, and one dedicated left turn lane. The proposal would improve traffic operations at this intersection. These changes will have no appreciable impacts on highway maintenance which are already part of existing programs.

3. ANALYSIS OF PERMIT PROPOSAL FOR GEOMETRIC AND FUNCTIONAL ADEQUACY.

No geometric changes will take place in the State right of way. The additional southbound left turn lane on Normandie Avenue will accommodate future traffic volumes, as shown in the results of the critical movement analysis summary for the intersection of Normandie Avenue and Artesia Boulevard (see Attachment C).

3a. NON-STANDARD DESIGN FEATURES? YES ☐ NO ☒
If YES above, provide rationale, name and date of Project Development reviewer's concurrence. (on Federal Aid Projects, FHWA concurrence)

4. REVISION IN ACCESS CONTROL OR TRANSFER OR R/W TO PERMITTEE INVOLVED: YES ☐ NO ☒

4a. IF YES, DATE OF DISTRICT DIRECTOR APPROVAL

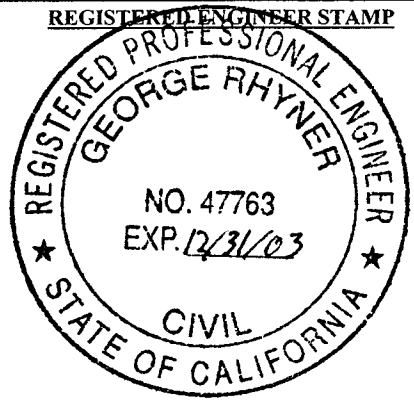
4b. IF INTERSTATE, DATE OF FHWA APPROVAL

5. SIGNALIZATION INVOLVED: ☒ YES ☐ NO

If yes, signal warrants met (see Attachment B)	☐ YES	☐ NO*	☒ NOT APPLICABLE
Capacity Analysis OK (see Attachment C)	☒ YES	☐ NO*	☐ NOT APPLICABLE
Safety Analysis OK	☒ YES	☐ NO*	☐ NOT APPLICABLE
Ownership/Maintenance provisions OK (to be transferred to City of Los Angeles)	☐ YES	☐ NO*	☒ NOT APPLICABLE

* address comments on an attached sheet)

REGISTERED ENGINEER STAMP



I attest to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions were based.

PERMIT PROPOSAL RECOMMENDED

☐ Yes, as submitted ☐ Yes, with conditions described above ☐ No, as described above

PREPARED BY	TITLE	UNIT	SIGNATURE OF REGISTERED ENGINEER
APPROVED BY	TITLE	DATE	DATE 12/15/99

EP 94 0016 REMARKS: SEND ONE COPY OF COMPLETED REPORT TO HEADQUARTERS OFFICE OF PROJECT PLANNING & DESIGN

ATTACHMENT "A"

Normandie Avenue and Artesia Boulevard
Preliminary Construction Cost Estimates

Construction Item	Quantity	Unit Cost	Cost
Removal			
Double yellow	200 L.F.	$1.65	$330
4 inch white dash	800 L.F.	$0.27	$216
Install			
4 inch white dash	880 L.F.	$0.21	$185
8 inch white	500 L.F.	$1.05	$525
Double yellow	500 L.F.	$0.23	$115
White arrows	2 each	$50	$100
Cat Track	150 L.F.	$1.05	$158
Signal modification	L.F.	$	$11,000
		Subtotal	$12,612
		Plus 25% Contingency Factor:	$3,153
		Total	$15,765
		Say	$16,000

ATTACHMENT "C"

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 04-19-1996 INITIALS: EA PERIOD: AM Peak Hour
CASE: Existing (1996)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	236	1760	265	0
EASTBOUND	125	1746	96	0
NORTHBOUND	153	678	56	142
SOUTHBOUND	273	639	78	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	2	1	0	0	5
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	130	N/A	675	675	N/A	N/A
EASTBOUND	69	N/A	460	460	N/A	N/A
NORTHBOUND	153	N/A	339	N/A	56	N/A
SOUTHBOUND	273	N/A	358	358	N/A	N/A

EAST-WEST CRITICAL VOLUMES 744
NORTH-SOUTH CRITICAL VOLUMES 612

THE SUM OF CRITICAL VOLUMES 1356

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.986

LEVEL OF SERVICE ..... E

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04-19-1996, 4:39 PM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 04-19-1996 INITIALS: EA PERIOD: PM Peak Hour
CASE: Existing (1996)

** INPUT VOLUMES **

APPROACH			** RIGHT TURNS	**
	LEFT	THROUGH	MIN ON GREEN	MAX ON RED
WESTBOUND	208	1609	147	0
EASTBOUND	192	1880	61	0
NORTHBOUND	187	978	243	103
SOUTHBOUND	290	580	129	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	2	1	0	0	5
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	114	N/A	585	585	N/A	N/A
EASTBOUND	106	N/A	485	485	N/A	N/A
NORTHBOUND	187	N/A	489	N/A	243	N/A
SOUTHBOUND	290	N/A	354	354	N/A	N/A

EAST-WEST CRITICAL VOLUMES 691
NORTH-SOUTH CRITICAL VOLUMES 779

THE SUM OF CRITICAL VOLUMES 1470

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 1.069

LEVEL OF SERVICE ..... F

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CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 11-20-1997 INITIALS: EA PERIOD: AM Peak Hour
CASE: Future (2006) With Project Plus Mitigation

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	281	2012	278	0
EASTBOUND	134	1833	114	0
NORTHBOUND	187	720	227	80
SOUTHBOUND	286	707	89	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	3	1	0	0	6
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	0	1	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	155	N/A	572	572	N/A	N/A
EASTBOUND	74	N/A	487	487	N/A	N/A
NORTHBOUND	187	N/A	360	N/A	227	N/A
SOUTHBOUND	157	N/A	398	398	N/A	N/A

EAST-WEST CRITICAL VOLUMES	646
NORTH-SOUTH CRITICAL VOLUMES	585
THE SUM OF CRITICAL VOLUMES	1231
NUMBER OF CRITICAL CLEARANCE INTERVALS	4
CMA VALUE	0.895
LEVEL OF SERVICE	D

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11-20-1997, 9:33 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 11-20-1997 INITIALS: EA PERIOD: PM Peak Hour
CASE: Future (2006) With Project Plus Mitigation

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	250	1848	240	0
EASTBOUND	199	1950	69	0
NORTHBOUND	200	1084	397	69
SOUTHBOUND	301	635	159	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	3	1	0	0	6
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	0	1	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	138	N/A	522	522	N/A	N/A
EASTBOUND	109	N/A	505	505	N/A	N/A
NORTHBOUND	200	N/A	542	N/A	397	N/A
SOUTHBOUND	166	N/A	397	397	N/A	N/A

EAST-WEST CRITICAL VOLUMES	643
NORTH-SOUTH CRITICAL VOLUMES	708
THE SUM OF CRITICAL VOLUMES	1351
NUMBER OF CRITICAL CLEARANCE INTERVALS	4
CMA VALUE	0.983
LEVEL OF SERVICE	E

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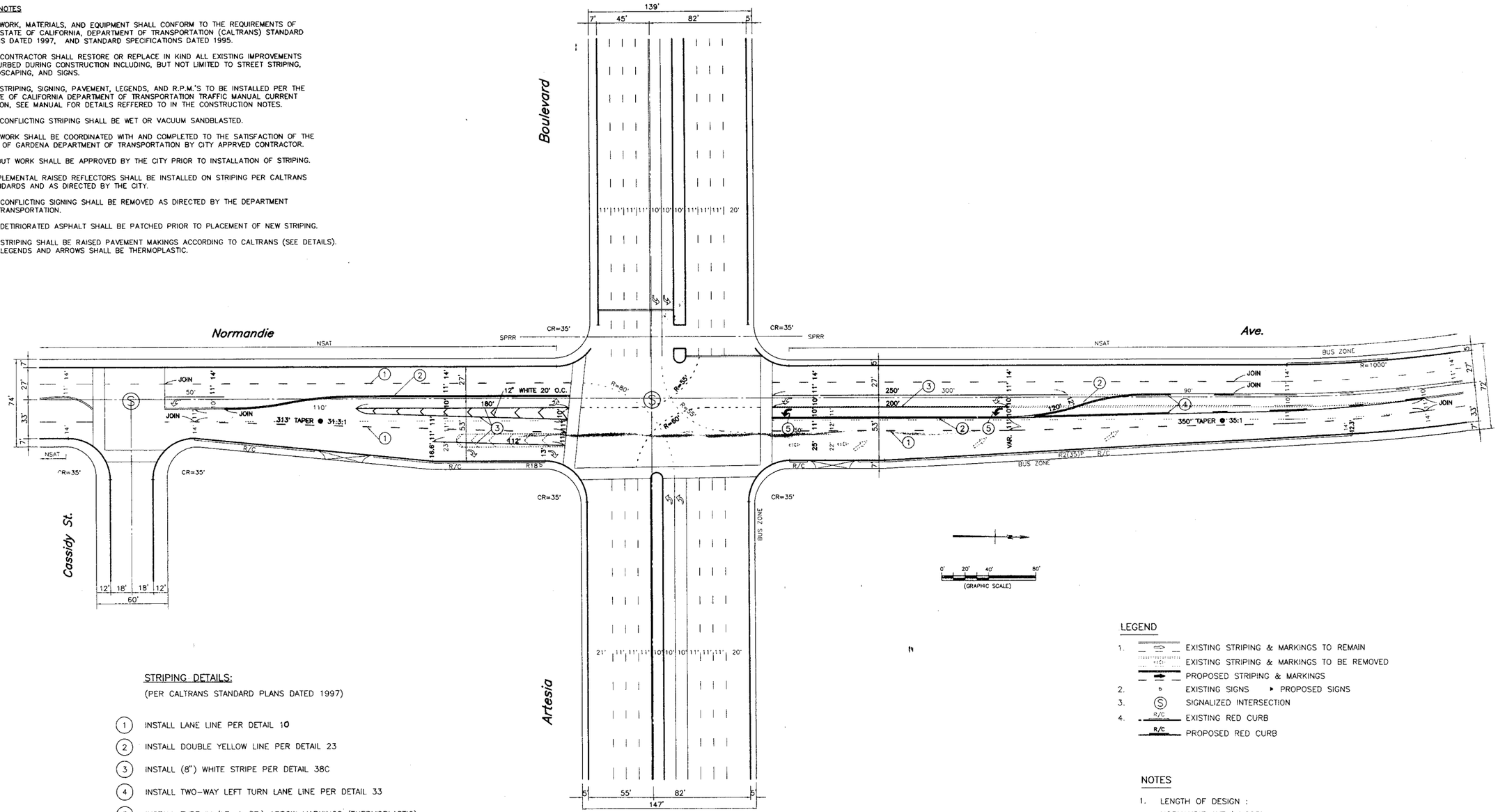
GENERAL NOTES

1. ALL WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS DATED 1997, AND STANDARD SPECIFICATIONS DATED 1995.
2. THE CONTRACTOR SHALL RESTORE OR REPLACE IN KIND ALL EXISTING IMPROVEMENTS DISTURBED DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO STREET STRIPING, LANDSCAPING, AND SIGNS.
3. ALL STRIPING, SIGNING, PAVEMENT, LEGENDS, AND R.P.M.'S TO BE INSTALLED PER THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION TRAFFIC MANUAL CURRENT EDITION, SEE MANUAL FOR DETAILS REFFERED TO IN THE CONSTRUCTION NOTES.
4. ALL CONFLICTING STRIPING SHALL BE WET OR VACUUM SANDBLASTED.
5. ALL WORK SHALL BE COORDINATED WITH AND COMPLETED TO THE SATISFACTION OF THE CITY OF GARDENA DEPARTMENT OF TRANSPORTATION BY CITY APPRVED CONTRACTOR.
6. LAYOUT WORK SHALL BE APPROVED BY THE CITY PRIOR TO INSTALLATION OF STRIPING.
7. SUPPLEMENTAL RAISED REFLECTORS SHALL BE INSTALLED ON STRIPING PER CALTRANS STANDARDS AND AS DIRECTED BY THE CITY.
8. ALL CONFLICTING SIGNING SHALL BE REMOVED AS DIRECTED BY THE DEPARTMENT OF TRANSPORTATION.
9. ALL DETIRIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF NEW STRIPING.
10. ALL STRIPING SHALL BE RAISED PAVEMENT MAKINGS ACCORDING TO CALTRANS (SEE DETAILS). ALL LEGENDS AND ARROWS SHALL BE THERMOPLASTIC.



STRIPING DETAILS:

(PER CALTRANS STANDARD PLANS DATED 1997)

(1) INSTALL LANE LINE PER DETAIL 10
(2) INSTALL DOUBLE YELLOW LINE PER DETAIL 23
(3) INSTALL (8") WHITE STRIPE PER DETAIL 38C
(4) INSTALL TWO-WAY LEFT TURN LANE LINE PER DETAIL 33
(5) INSTALL TYPE IV (LT. & RT.) ARROW MARKINGS (THERMOPLASTIC)

LEGEND

1. EXISTING STRIPING & MARKINGS TO REMAIN
   EXISTING STRIPING & MARKINGS TO BE REMOVED
   PROPOSED STRIPING & MARKINGS
2. EXISTING SIGNS ▸ PROPOSED SIGNS
3. (S) SIGNALIZED INTERSECTION
4. R/C EXISTING RED CURB
   R/C PROPOSED RED CURB

NOTES

1. LENGTH OF DESIGN :
   NORMANDIE AVE. ± 1,095'
2. PAINT REMOVAL REQUIRED.

CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

PLAN PREPARED BY: _____ REGISTERED TRAFFIC ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER — VLADO J. VLAHOVIC — NO. 1168 Exp. 12-31-98 — TRAFFIC — STATE OF CALIFORNIA

PLAN RECOMMENDED BY: _____ REGISTERED CIVIL ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER — GEORGE RHYNER — NO. 047763 Exp. 12-31-99 — CIVIL — STATE OF CALIFORNIA

NO.	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT — ENGINEERING DIVISION
PROJECT: HARBOR GATEWAY
LIMITS: NORMANDIE AVE. FROM 440' S/O TO 655' N/O ARTESIA BLVD.

F.B. REF. | DATE
DESIGNED BY
DRAWN BY
CHECKED BY

APPROVED BY: _____, 19 99
CITY ENGINEER — R.C.E. NO. 19827

SHT. OF — DWG. NO.

BOE-C6-0090007

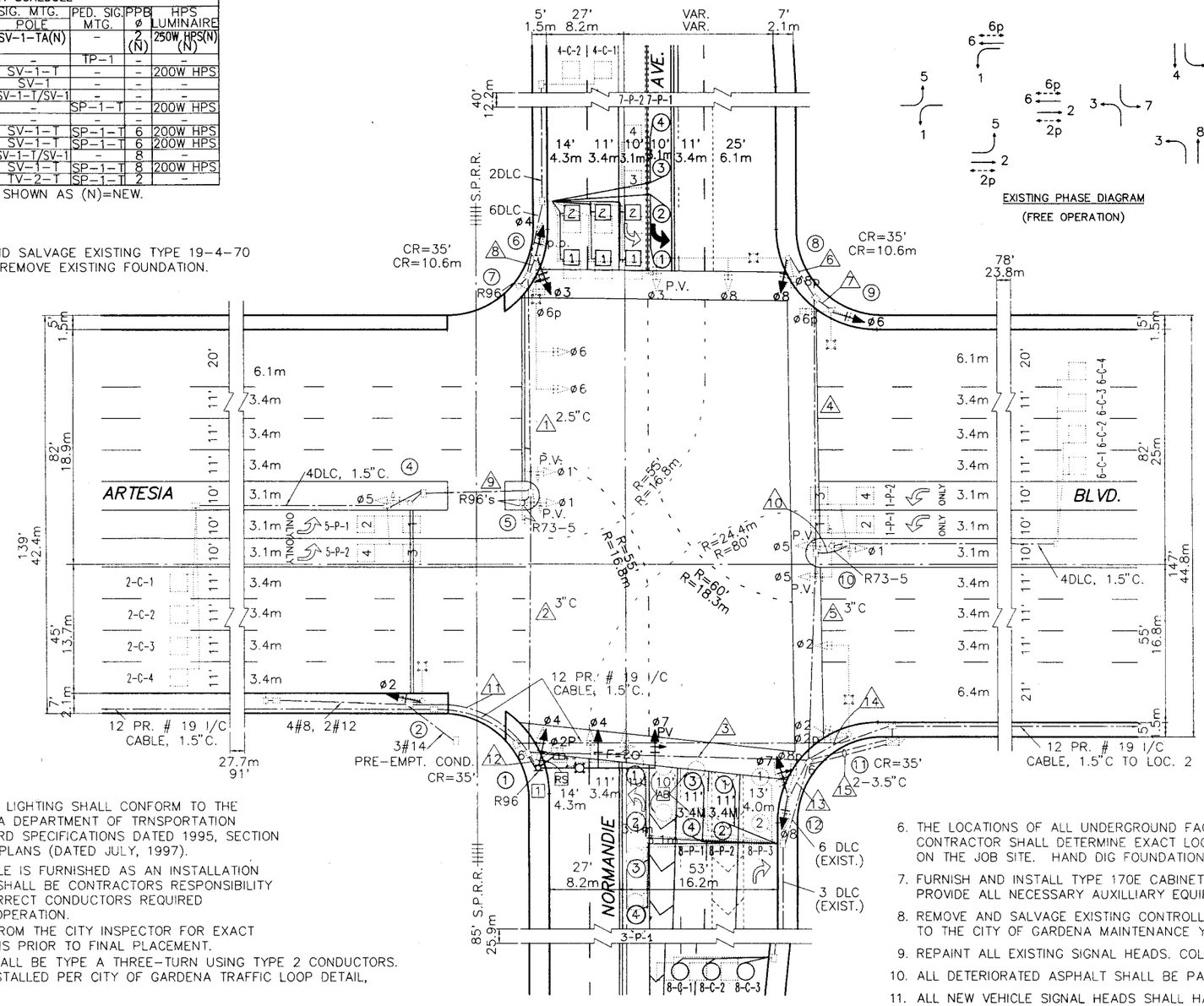
POLE AND EQUIPMENT SCHEDULE

No.	TYPE	STANDARD SIG. M.A	STANDARD LUM. M.A	VEH. SIG. MTG. MAST	VEH. SIG. MTG. POLE	PED. SIG. MTG.	PPB ø	HPS LUMINAIRE
①	26-3-70 (N)	40' (N)	12' (N)	MAS(N) MAS(N)	SV-1-TA(N)	-	2 (N)	250W HPS(N)
②	1A-10'	-	-	-	-	TP-1	-	-
③	15	-	12'	-	SV-1-T	-	-	200W HPS
④	1A-10'	-	-	-	SV-1	-	-	-
⑤	33	10'	-	MAS	SV-1-T/SV-1	-	-	-
⑥	26-4-70	45'	12'	MAS	-	SP-1-T	-	200W HPS
⑦	1A-7	-	-	-	-	-	-	-
⑧	26-4-70	45'	12'	MAS	SV-1-T	SP-1-T	6	200W HPS
⑨	15	-	12'	-	SV-1-T	SP-1-T	6	200W HPS
⑩	33	10'	-	MAS	SV-1-T/SV-1	-	8	-
⑪	17-2-70	30'	12'	MAS	SV-1-T	SP-1-T	8	200W HPS
⑫	1A-10'	-	-	-	TV-2-T	SP-1-T	2	-

ALL EQUIPMENT IS EXISTING UNLESS SHOWN AS (N)=NEW.

NOTES:

[1] AT LOCATION ① REMOVE AND SALVAGE EXISTING TYPE 19-4-70 POLE AND ASSEMBLY AND REMOVE EXISTING FOUNDATION.



CONDUCTOR SCHEDULE

SIZE No.	CABLE / WIRE	RUN 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MULTI	3 CONDUCTOR CABLE (N) 3 X #14						1	1	1		1		1	1	1	
MULTI	5 CONDUCTOR CABLE (N) 5 X #14						4	2	4	1	3	1	4	3	3	
MULTI	28 CONDUCTOR CABLE (N) 27 X #14 & 1 X #10 (COM)	1	2	3	1	2										5
6	SERVICE (E)			2												2
DLC	LOOP CABLE (N)	1	1	1												1
DLC	LOOP CABLE (E)	5	11	11		6										23
12 Pr #19	INTERCONNECT (E)															
10	LUMINAIRE (E)	2	2	2	2	2	2	2	2		2	2	2	2		
12	SIGN LIGHTING (E)	2	2	2	2	2	2	2	2		2	2	2	2		
3 #20	EMER. VEH. DET. CABLE (E)			1												2
	CONDUIT SIZE	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.

REMOVE ALL CONDUCTORS FROM CONDUIT RUN 1-14. REPULL CONDUCTORS AND CABLES SHOWN AS EXISTING (E). AND INSTALL NEW (N) CONDUCTORS.
CLEAN EXISTING CONDUITS AFTER REMOVAL OF EXISTING CONDUCTORS.

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10. ALL DETERIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF LOOPS.
11. ALL NEW VEHICLE SIGNAL HEADS SHALL HAVE 12-INCH LENSES.

SCALE: 1": 20'

CRAIN & ASSOCIATES
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DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER GEORGE RHYNER NO. 047763 Exp. 12-31-99 CIVIL STATE OF CALIFORNIA

NO	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT ENGINEERING DIVISION
PROJECT: HARBOR GATEWAY
LIMITS: ARTESIA BLVD. AT NORMANDIE AVE.

F.B. REF. | DATE | APPROVED BY: 12/17/98
DESIGNED BY
DRAWN BY
CHECKED BY
QUALIFIED ENGINEER | R.C.E. NO. 19727
SHT.__OF__ | DWG. NO.

BOE-C6-0090008

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

PERMIT ENGINEERING EVALUATION REPORT

TR-0112 (REV. 8/94)

HOURS FOR PREPARING:	PERMIT NO.:
DATE: 12/15/99	DIST/CO/RTE/PM: 07/LA/91/5.51
EA USED: Harbor Gateway Center	APPLICANT: Boeing Realty Corporation

1. DESCRIBE PERMIT PROPOSAL, WHAT IT SERVES, APPROXIMATE COST.

Artesia Boulevard (SR-91) passes north of the 170-acre multi-use retail/industrial facility being constructed on the site of a former Boeing Aircraft manufacturing facility. As part of the Harbor Gateway Center traffic mitigation recommendations, projected traffic conditions would require southbound lanes on Normandie Avenue to be restriped for dual left turn lanes. Northbound Normandie Avenue lanes would be adjusted to match lane changes on the north side of the intersection, allowing for a smooth through traffic flow. These changes will take place to the City of Gardena facilities. No existing lane markings in the State right-of-way will be changed. The City of Gardena controls the signalization of the intersection. One existing signal pole and mast arm will be replaced on the southwest corner of Normandie Avenue. All northbound and southbound Normandie Avenue mastheads will be replaced and upgraded from eight-inch to twelve-inch lenses. Loop detectors in Normandie Avenue at Artesia Boulevard will also be replaced. The cost of improvements would be $15,765 to be born by the applicant. See Attachment A.

2. DESCRIBE EXISTING HIGHWAY - BRIEF ANALYSIS OF IMPACT ON HIGHWAY OPERATION, AND MAINTENANCE.

The Normandie Avenue and Artesia Boulevard (SR-91) intersection located in the City of Gardena. Signals at this intersection are controlled by Gardena. At the intersection, Artesia Boulevard has three through lanes, one shared through and right turn lane, and two left turn lanes. An existing center divider separates eastbound from westbound traffic. Northbound Normandie Avenue contains a dedicated right turn lane, two through lanes and one left turn lane. A painted median separates the dedicated right turn lane from the number one through lane. Southbound Normandie Avenue contains two through lanes, one shared through and right turn lane, and one dedicated left turn lane. The proposal would improve traffic operations at this intersection. These changes will have no appreciable impacts on highway maintenance which are already part of existing programs.

3. ANALYSIS OF PERMIT PROPOSAL FOR GEOMETRIC AND FUNCTIONAL ADEQUACY.

No geometric changes will take place in the State right of way. The additional southbound left turn lane on Normandie Avenue will accommodate future traffic volumes, as shown in the results of the critical movement analysis summary for the intersection of Normandie Avenue and Artesia Boulevard (see Attachment C).

3a. NON-STANDARD DESIGN FEATURES? YES ☐ NO ☒

If YES above, provide rationale, name and date of Project Development reviewer's concurrence. (on Federal Aid Projects, FHWA concurrence)

4. REVISION IN ACCESS CONTROL OR TRANSFER OR R/W TO PERMITTEE INVOLVED: YES ☐ NO ☒

4a. IF YES, DATE OF DISTRICT DIRECTOR APPROVAL

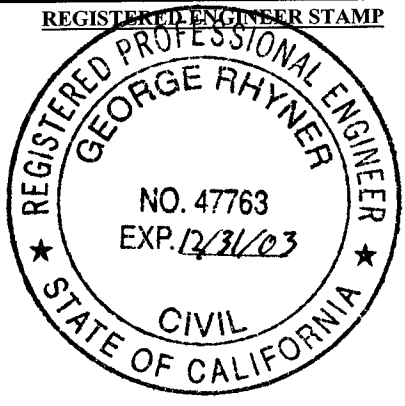
4b. IF INTERSTATE, DATE OF FHWA APPROVAL

5. SIGNALIZATION INVOLVED: ☒ YES ☐ NO

If yes, signal warrants met (see Attachment B)	☐ YES	☐ NO*	☒ NOT APPLICABLE
Capacity Analysis OK (see Attachment C)	☒ YES	☐ NO*	☐ NOT APPLICABLE
Safety Analysis OK	☒ YES	☐ NO*	☐ NOT APPLICABLE
Ownership/Maintenance provisions OK (to be transferred to City of Los Angeles)	☐ YES	☐ NO*	☒ NOT APPLICABLE

* address comments on an attached sheet)

REGISTERED ENGINEER STAMP



I attest to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions were based.

PERMIT PROPOSAL RECOMMENDED

☐ Yes, as submitted ☐ Yes, with conditions described above ☐ No, as described above

PREPARED BY	TITLE	UNIT	SIGNATURE OF REGISTERED ENGINEER George Rhyner
APPROVED BY	TITLE	DATE	DATE 12/15/99

EP 94 0016 REMARKS: SEND ONE COPY OF COMPLETED REPORT TO HEADQUARTERS OFFICE OF PROJECT PLANNING & DESIGN

ATTACHMENT "A"

Normandie Avenue and Artesia Boulevard
Preliminary Construction Cost Estimates

Construction Item	Quantity	Unit Cost	Cost
Removal			
Double yellow	200 L.F.	$1.65	$330
4 inch white dash	800 L.F.	$0.27	$216
Install			
4 inch white dash	880 L.F.	$0.21	$185
8 inch white	500 L.F.	$1.05	$525
Double yellow	500 L.F.	$0.23	$115
White arrows	2 each	$50	$100
Cat Track	150 L.F.	$1.05	$158
Signal modification	L.F.	$	$11,000
		Subtotal	$12,612
		Plus 25% Contingency Factor:	$3,153
		Total	$15,765
		Say	$16,000

ATTACHMENT "C"

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 04-19-1996 INITIALS: EA PERIOD: AM Peak Hour
CASE: Existing (1996)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	236	1760	265	0
EASTBOUND	125	1746	96	0
NORTHBOUND	153	678	56	142
SOUTHBOUND	273	639	78	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	2	1	0	0	5
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	130	N/A	675	675	N/A	N/A
EASTBOUND	69	N/A	460	460	N/A	N/A
NORTHBOUND	153	N/A	339	N/A	56	N/A
SOUTHBOUND	273	N/A	358	358	N/A	N/A

EAST-WEST CRITICAL VOLUMES 744
NORTH-SOUTH CRITICAL VOLUMES 612

THE SUM OF CRITICAL VOLUMES 1356

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.986

LEVEL OF SERVICE ..... E

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04-19-1996, 4:39 PM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 04-19-1996 INITIALS: EA PERIOD: PM Peak Hour
CASE: Existing (1996)

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	208	1609	147	0
EASTBOUND	192	1880	61	0
NORTHBOUND	187	978	243	103
SOUTHBOUND	290	580	129	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	2	1	0	0	5
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	1	0	1	1	0	0	3

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	114	N/A	585	585	N/A	N/A
EASTBOUND	106	N/A	485	485	N/A	N/A
NORTHBOUND	187	N/A	489	N/A	243	N/A
SOUTHBOUND	290	N/A	354	354	N/A	N/A

EAST-WEST CRITICAL VOLUMES 691
NORTH-SOUTH CRITICAL VOLUMES 779

THE SUM OF CRITICAL VOLUMES 1470

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 1.069

LEVEL OF SERVICE ..... F

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04-19-1996, 4:39 PM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 11-20-1997 INITIALS: EA PERIOD: AM Peak Hour
CASE: Future (2006) With Project Plus Mitigation

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	281	2012	278	0
EASTBOUND	134	1833	114	0
NORTHBOUND	187	720	227	80
SOUTHBOUND	286	707	89	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	3	1	0	0	6
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	0	1	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	155	N/A	572	572	N/A	N/A
EASTBOUND	74	N/A	487	487	N/A	N/A
NORTHBOUND	187	N/A	360	N/A	227	N/A
SOUTHBOUND	157	N/A	398	398	N/A	N/A

EAST-WEST CRITICAL VOLUMES 646
NORTH-SOUTH CRITICAL VOLUMES 585

THE SUM OF CRITICAL VOLUMES 1231

NUMBER OF CRITICAL CLEARANCE INTERVALS 4

CMA VALUE 0.895

LEVEL OF SERVICE ..... D

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11-20-1997, 9:33 AM

CRAIN AND ASSOCIATES
CMA CALCULATIONS

INTERSECTION:20, Artesia Bl. and Normandie Ave.
DATE: 11-20-1997 INITIALS: EA PERIOD: PM Peak Hour
CASE: Future (2006) With Project Plus Mitigation

** INPUT VOLUMES **

APPROACH	LEFT	THROUGH	** RIGHT TURNS MIN ON GREEN	MAX ON RED **
WESTBOUND	250	1848	240	0
EASTBOUND	199	1950	69	0
NORTHBOUND	200	1084	397	69
SOUTHBOUND	301	635	159	0

** NUMBER OF LANES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED	TOTAL LANES
WESTBOUND	2	0	3	1	0	0	6
EASTBOUND	2	0	3	1	0	0	6
NORTHBOUND	1	0	2	0	1	0	4
SOUTHBOUND	2	0	1	1	0	0	4

** ASSIGNED LANE VOLUMES **

APPROACH	LEFT ONLY	LEFT SHARED	THROUGH ONLY	RIGHT SHARED	RIGHT ONLY	L/T/R SHARED
WESTBOUND	138	N/A	522	522	N/A	N/A
EASTBOUND	109	N/A	505	505	N/A	N/A
NORTHBOUND	200	N/A	542	N/A	397	N/A
SOUTHBOUND	166	N/A	397	397	N/A	N/A

EAST-WEST CRITICAL VOLUMES	643
NORTH-SOUTH CRITICAL VOLUMES	708
THE SUM OF CRITICAL VOLUMES	1351
NUMBER OF CRITICAL CLEARANCE INTERVALS	4
CMA VALUE	0.983
LEVEL OF SERVICE	E

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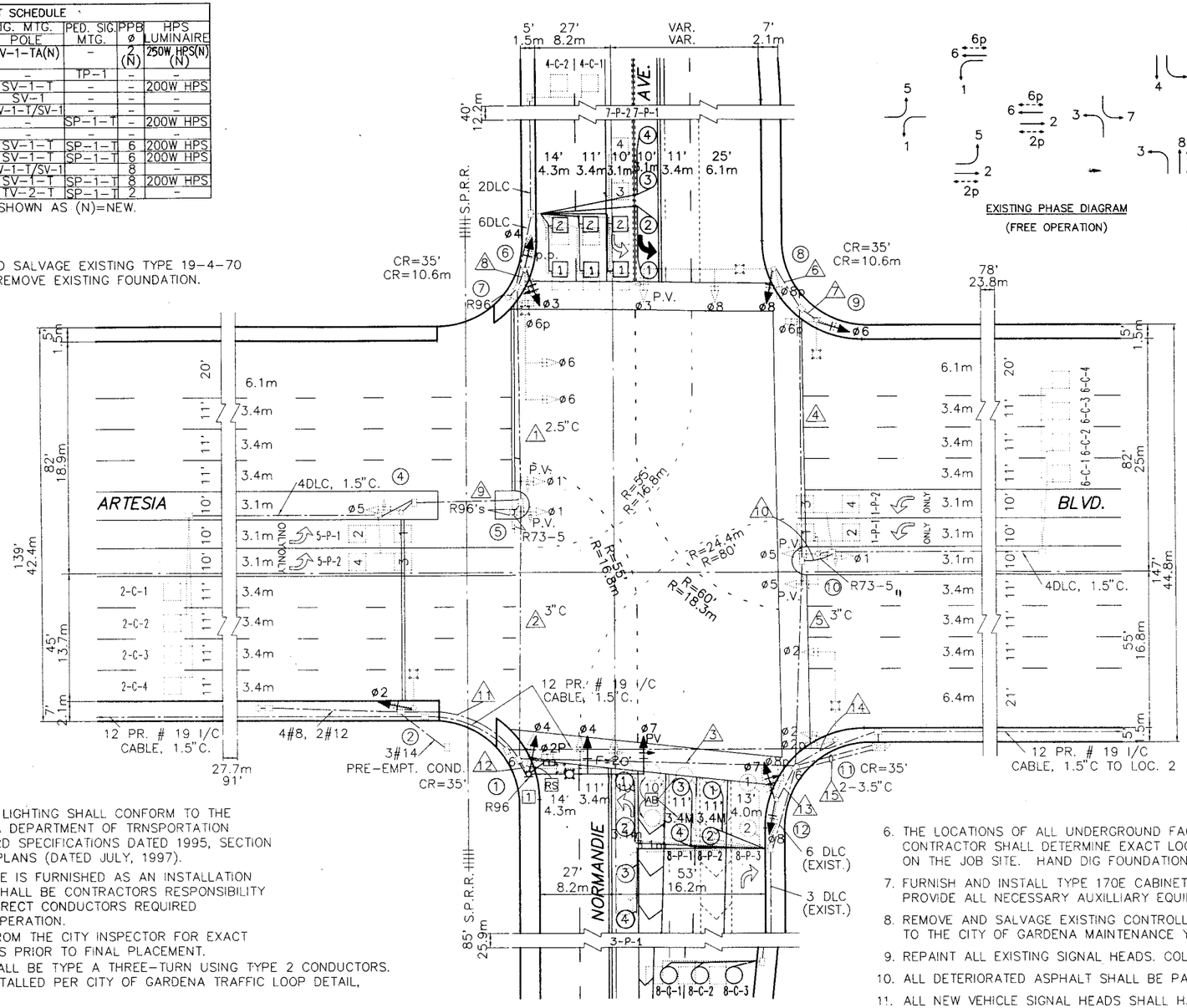
POLE AND EQUIPMENT SCHEDULE

No.	TYPE	STANDARD SIG. M.A.	STANDARD LUM. M.A.	VEH. SIG. MTG. MAST	VEH. SIG. MTG. POLE	PED. SIG. MTG.	PPB ø	HPS LUMINAIRE
①	26-3-70 (N)	40' (N)	12' (N)	MAS(N) MAS(N)	SV-1-TA(N)	-	2 (N)	250W HPS(N) (N)
②	1A-10'	-	-	-	-	TP-1	-	-
③	15	-	12'	-	SV-1-T	-	-	200W HPS
④	1A-10'	-	-	-	SV-1	-	-	-
⑤	33	10'	-	MAS	SV-1-T/SV-1	-	-	-
⑥	26-4-70	45'	12'	MAS	-	SP-1-T	-	200W HPS
⑦	1A-7'	-	-	-	-	-	-	-
⑧	26-4-70	45'	12'	MAS	SV-1-T	SP-1-T	6	200W HPS
⑨	15	-	12'	-	SV-1-T	SP-1-T	6	200W HPS
⑩	33	10'	-	MAS	SV-1-T/SV-1	-	8	-
⑪	17-2-70	30'	12'	MAS	SV-1-T	SP-1-T	8	200W HPS
⑫	1A-10'	-	-	-	TV-2-T	SP-1-T	2	-

ALL EQUIPMENT IS EXISTING UNLESS SHOWN AS (N)=NEW.

NOTES:

1 AT LOCATION ① REMOVE AND SALVAGE EXISTING TYPE 19-4-70 POLE AND ASSEMBLY AND REMOVE EXISTING FOUNDATION.



EXISTING PHASE DIAGRAM
(FREE OPERATION)

CONDUCTOR SCHEDULE

SIZE No.	CABLE / WIRE	RUN 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
MULTI	3 CONDUCTOR CABLE (N) 3 X #14						1	1	1		1		1	1	1	
MULTI	5 CONDUCTOR CABLE (N) 5 X #14						4	2	4	1	3	1	4	3	3	
MULTI	28 CONDUCTOR CABLE (N) 27 X #14 & 1 X #10 (COM)	1	2	3	1	2										5
6	SERVICE (E)			2												2
DLC	LOOP CABLE (N)	1	1	1												1
DLC	LOOP CABLE (E)	5	11	11		6										23
12 Pr #19	INTERCONNECT (E)															
10	LUMINAIRE (E)	2	2	2	2	2	2	2	2			2	2	2	2	
12	SIGN LIGHTING (E)	2	2	2	2	2	2	2	2			2	2	2	2	
3 #20	EMER. VEH. DET. CABLE (E)			1												2
	CONDUIT SIZE	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex.	Ex

REMOVE ALL CONDUCTORS FROM CONDUIT RUN 1-14. REPULL CONDUCTORS AND CABLES SHOWN AS EXISTING (E). AND INSTALL NEW (N) CONDUCTORS.
CLEAN EXISTING CONDUITS AFTER REMOVAL OF EXISTING CONDUCTORS.

GENERAL NOTES:

1. TRAFFIC SIGNAL AND LIGHTING SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF TRNSPORTATION (CALTRANS) STANDARD SPECIFICATIONS DATED 1995, SECTION 86, AND STANDARD PLANS (DATED JULY, 1997).
2. CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE CONTRACTORS RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
3. OBTAIN APPROVAL FROM THE CITY INSPECTOR FOR EXACT EQUIPMENT LOCATIONS PRIOR TO FINAL PLACEMENT.
4. LOOP DETECTORS SHALL BE TYPE A THREE-TURN USING TYPE 2 CONDUCTORS. LOOPS SHALL BE INSTALLED PER CITY OF GARDENA TRAFFIC LOOP DETAIL, DWG. NO. ST-24.
5. THE LOCATIONS OF ALL UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTIONS. TELEPHONE UNDERGROUND SERVICE ALERT, AT (800) 422-4133, 48 HOURS PRIOR TO CONSTRUCTION.
6. THE LOCATIONS OF ALL UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS AND VERIFY ALL CONDITIONS ON THE JOB SITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTIONS.
7. FURNISH AND INSTALL TYPE 170E CABINET AND SIGNAL CONTROLLER. PROVIDE ALL NECESSARY AUXILLIARY EQUIPMENT FOR THE OPERATION SHOWN.
8. REMOVE AND SALVAGE EXISTING CONTROLLER AND CABINET AND DELIVER IT TO THE CITY OF GARDENA MAINTENANCE YARD.
9. REPAINT ALL EXISTING SIGNAL HEADS. COLOR TO BE APPROVED BY CITY OF GARDENA.
10. ALL DETERIORATED ASPHALT SHALL BE PATCHED PRIOR TO PLACEMENT OF LOOPS.
11. ALL NEW VEHICLE SIGNAL HEADS SHALL HAVE 12-INCH LENSES.

SCALE: 1": 20'

C&A
CRAIN & ASSOCIATES
2007 Sawtelle Boulevard
Los Angeles, California 90025
(310) 473-6508
Transportation Planning · Traffic Engineering

PLAN PREPARED BY:
REGISTERED TRAFFIC ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER VLADO J. VLAHOVIC NO. 1158 Exp. 12-31-98 TRAFFIC STATE OF CALIFORNIA

PLAN RECOMMENDED BY:
REGISTERED CIVIL ENGINEER
DATE: 12/17/98

REGISTERED PROFESSIONAL ENGINEER GEORGE RHYNER NO. 047763 Exp. 12-31-99 CIVIL STATE OF CALIFORNIA

NO	REVISIONS	DATE	BY	APP.

CITY OF GARDENA
COMMUNNITY DEVELOPMENT DEPARTMENT ENGINEERING DIVISION
PROJECT: HARBOR GATEWAY
LIMITS: ARTESIA BLVD. AT NORMANDIE AVE.

F.B. REF. | DATE | APPROVED BY: _____ 19 98
DESIGNED BY
DRAWN BY
CHECKED BY
CITY ENGINEER | R.C.E. NO. 19327
SHT. __ OF __ | DWG. NO.

BOE-C6-0090016